Fairview Microwave
an INFINITE brand

TIMES MICROWAVE SYSTEMS

TC-240-TM-X DATA SHEET

TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable

Times Microwave Systems Connector Specification

TNC male connector with crimp/solder attachment for LMR-240, part number TC-240-TM-X, from Fairview Microwave is in-stock and ships same day. This TNC male connector operates up to a maximum frequency of 8 GHz and offers good VSWR of 1.3:1.

Fairview's TNC male connector TC-240-TM-X datasheet specifications and outline drawing are shown in this PDF below. Our extensive offering of RF, microwave and millimeter wave connectors allows designers to configure and customize their signal connections however they like. From providing an I/O for a board design to creating a custom cable assembly configuration, Fairview Microwave has a connector solution to meet your needs. Fairview Microwave also has the expertise to build your custom cable assemblies for you and ship them same-day.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	DC		8	GHz
VSWR			1.3:1	
Insertion Loss			0.3	dB
Operating Voltage (AC)			500	Vrms
DWV (AC)			1,500	Vrms
Insulation Resistance	5,000			MOhms

Mechanical Specifications

Size

Length	1.22 in [30.99 mm]
Width/Dia.	0.59 in [14.99 mm]
Weight	0.051 lbs [23.13 g]
Mating Cycles	500 Cycles
Mating Torque	8 to 12 in-lbs [0.90 to 1.36 Nm]

Material Specifications

Description	Material	Plating
Contact	Brass	Gold 50 µinch
Insulation	Teflon	
Body	Brass	Tri-Metal 80 µinch
Coupling Nut	Brass	Tri-Metal 80 µinch

Environmental Specifications

Temperature

Operating Range	-40 to +125 deg C

Configuration:

- TNC Male Connector
- 50 Ohms
- Straight Body Geometry
- LMR-240 Interface Type
- Crimp/Solder Attachment

Features:

- Operating Frequency of 8 GHz Max.
- Good VSWR of 1.3:1
- Gold Plated Brass Contact
- 50 µinch contact plating

Applications:

- General Purpose Test
- Custom Cable Assemblies

Fairview Microwave
301 Leora Ln., Suite 100
Lewisville, TX 75056
Tel: 1-800-715-4396 / (972) 649-6678
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Shock	MIL-STD 202G, Meth. 213, Cond. I
Vibration	MIL-STD 202G, Meth. 204, Cond. B
Thermal Shock	MIL-STD 202G, Meth. 107, Cond. B

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

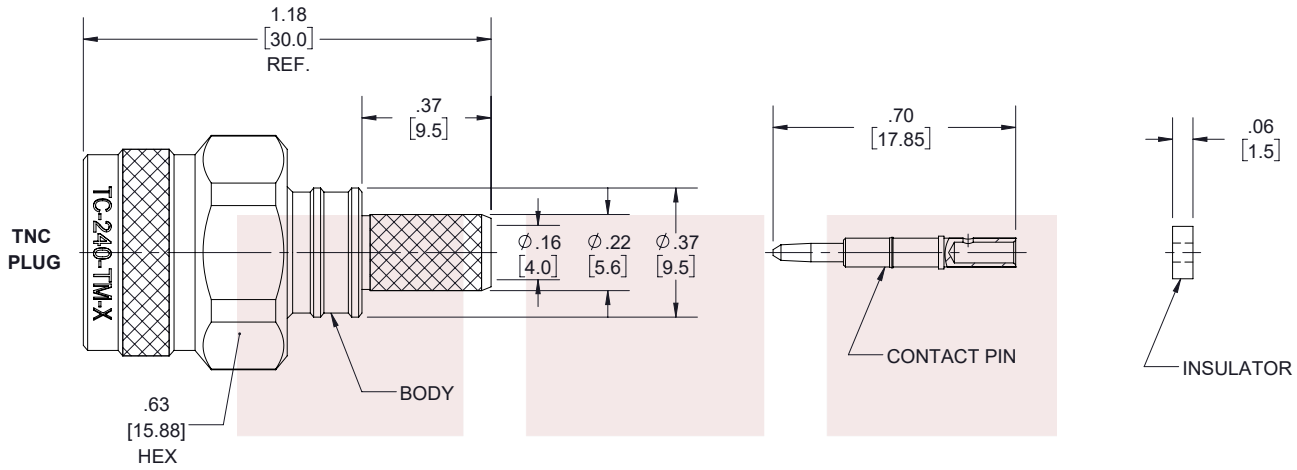
TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

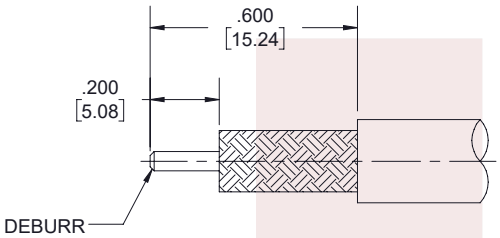
For additional information on this product, please click the following link: TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable TC-240-TM-X

URL: https://www.fairviewmicrowave.com/tnc-male-lmr-240-connector-tc-240-tm-x-p.aspx

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.

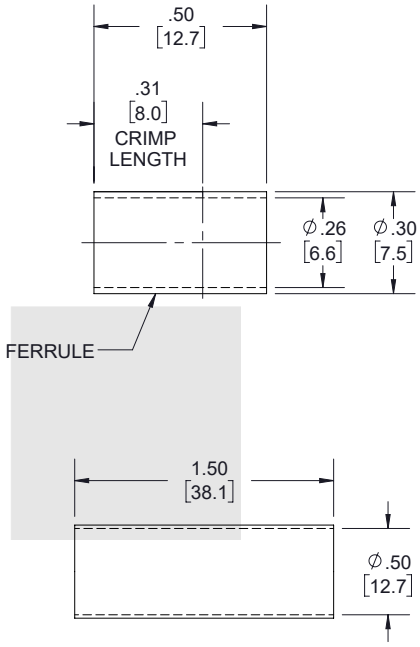
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	PCR TC-240-TM-X 20200622	06/30/20	SRAUTUS





RECOMMENDED CABLE
STRIPPING DIMENSIONS

CABLE ATTACHMENT:
INNER: SOLDER.
OUTER: CRIMP.



SHRINK TUBE(1/2"x1.5" 3:1)

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Fairview Microwave
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TITLE

TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES:

.X = ±.2 [5.08] FRACTIONS
.XX = ±.02 [.51] ± 1/32
.XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

THIRD-ANGLE PROJECTION

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SHEET 1 OF 1

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SCALE N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	SLI	TC-240-TM-X	A

T-Rev.D

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TIMES MICROWAVE SYSTEMS

TC-240-TM-X DATA SHEET

TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable

Times Microwave Systems Connector Specification

TNC male connector with crimp/solder attachment for LMR-240, part number TC-240-TM-X, from Fairview Microwave is in-stock and ships same day. This TNC male connector operates up to a maximum frequency of 8 GHz and offers good VSWR of 1.3:1.

Fairview's TNC male connector TC-240-TM-X datasheet specifications and outline drawing are shown in this PDF below. Our extensive offering of RF, microwave and millimeter wave connectors allows designers to configure and customize their signal connections however they like. From providing an I/O for a board design to creating a custom cable assembly configuration, Fairview Microwave has a connector solution to meet your needs. Fairview Microwave also has the expertise to build your custom cable assemblies for you and ship them same-day.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	DC		8	GHz
VSWR			1.3:1	
Insertion Loss			0.3	dB
Operating Voltage (AC)			500	Vrms
DWV (AC)			1,500	Vrms
Insulation Resistance	5,000			MOhms

Mechanical Specifications

Size

Length	1.22 in [30.99 mm]
Width/Dia.	0.59 in [14.99 mm]
Weight	0.051 lbs [23.13 g]
Mating Cycles	500 Cycles
Mating Torque	8 to 12 in-lbs [0.90 to 1.36 Nm]

Material Specifications

Description	Material	Plating
Contact	Brass	Gold 50 µinch
Insulation	Teflon	
Body	Brass	Tri-Metal 80 µinch
Coupling Nut	Brass	Tri-Metal 80 µinch

Environmental Specifications

Temperature

Operating Range	-40 to +125 deg C

Configuration:

- TNC Male Connector
- 50 Ohms
- Straight Body Geometry
- LMR-240 Interface Type
- Crimp/Solder Attachment

Features:

- Operating Frequency of 8 GHz Max.
- Good VSWR of 1.3:1
- Gold Plated Brass Contact
- 50 µinch contact plating

Applications:

- General Purpose Test
- Custom Cable Assemblies

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Shock	MIL-STD 202G, Meth. 213, Cond. I
Vibration	MIL-STD 202G, Meth. 204, Cond. B
Thermal Shock	MIL-STD 202G, Meth. 107, Cond. B

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable TC-240-TM-X

URL: https://www.fairviewmicrowave.com/tnc-male-lmr-240-connector-tc-240-tm-x-p.aspx

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
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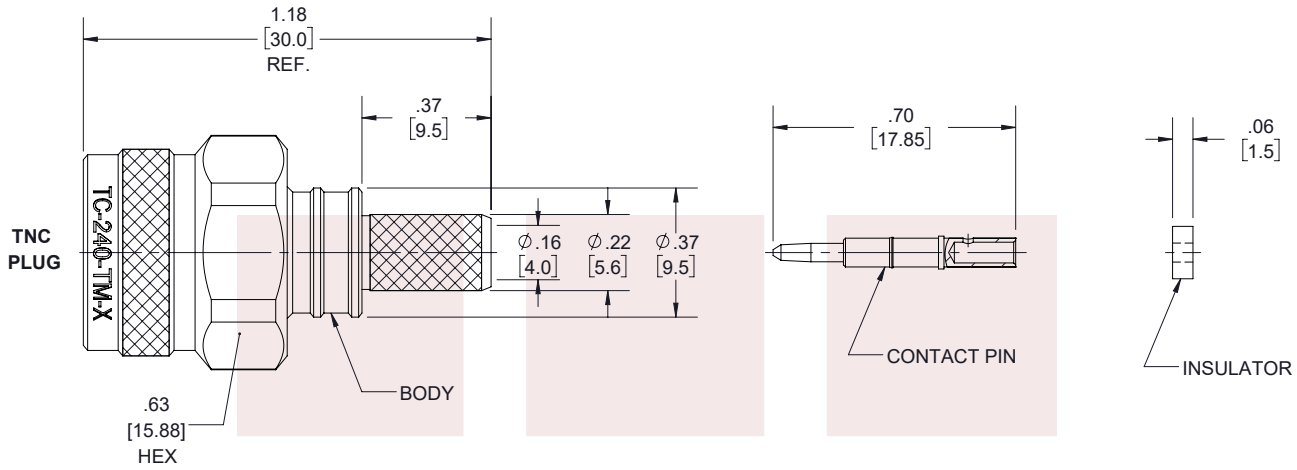

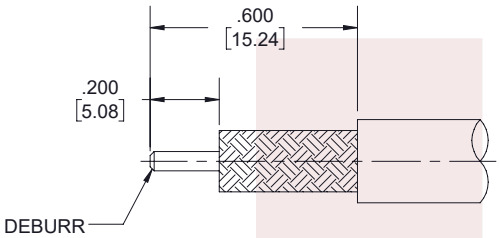

RECOMMENDED CABLE
STRIPPING DIMENSIONS

CABLE ATTACHMENT:
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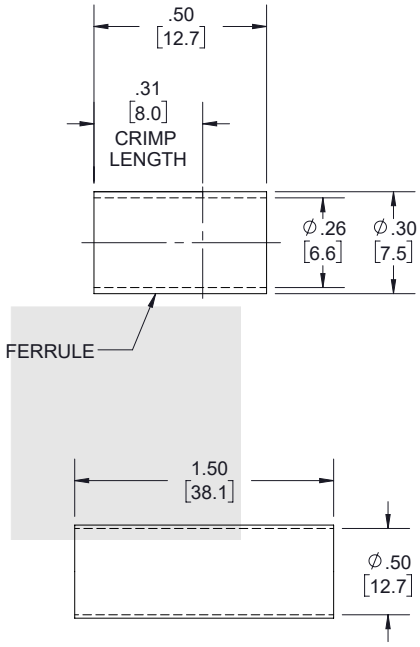
OUTER: CRIMP.



SHRINK TUBE(1/2"x1.5" 3:1)

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Fairview Microwave
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TITLE

TNC Male Connector Crimp/Solder Attachment for LMR-240 Cable

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES:

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THIRD-ANGLE PROJECTION

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SHEET 1 OF 1

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SCALE N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	SLI	TC-240-TM-X	A

T-Rev.D

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TIMES MICROWAVE SYSTEMS

LMR®-240
Flexible Low Loss Communications Coax

Ideal for...

- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs (e.g. WLL, GPS, LMR, Mobile Antennas)
- Any application (e.g. WLL, GPS, LMR, WLAN, WISP, WiMax, SCADA, Mobile Antennas) requiring an easily routed, low loss RF cable

• **LMR®** standard is a UV Resistant Polyethylene jacketed cable designed for 20-year service outdoor use. The bending and handling characteristics are significantly better than air-dielectric and corrugated hard-line cables.

• **LMR®- DB** is identical to standard LMR plus has the advantage of being watertight. The addition of waterproofing compound in and around the foil/braid insures continuous reliable service should the jacket be inadvertently damaged during installation or in the future.

• **LMR®- FR** is a non-halogen (non-toxic), low smoke, fire retardant cable designed for in-building runs that can be routed anywhere except air handling plenums. LMR-FR is UL/NEC & CSA rated'CMR' and 'FT4' respectively, meets FAA FAR25 requirements and is MSHA-P for mining applications.

• **LMR®- FR-PVC** is a general-purpose indoor cable and has a UL/NEC & CSA rating of 'CMR' and 'FT4' respectively. It is less expensive than LMR-FR, however it emits toxic fumes (HCL) and greater smoke density when burned.

• **LMR®- PVC** is designed for low loss general-purpose applications and is somewhat more flexible than the standard polyethylene jacketed LMR.

• **LMR®- PVC-W** is a white-jacketed version of LMR-PVC for marine and other applications where color compatibility is desired.

• **LMR®- MA** is a flexible cable designed specifically for mobile antenna applications. It has a PVC jacket and un-bonded aluminum tape to facilitate end stripping with automated equipment.

• **Flexibility** and bendability are hallmarks of the LMR-240 cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.

• **Low Loss** is another hallmark feature of LMR-240. Size for size LMR has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.

• **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).

• **Weatherability**: LMR-240 cables designed for outdoor exposure incorporate the best materials for UV resistance and have life expectancy in excess of 20 years.

• **Connectors**: A wide variety of connectors are available for LMR-240 cable, including all common interface types, reverse polarity, and a choice of solder or non-solder center pins. Most LMR connectors employ crimp outer attachment using standard hex crimp sizes.

• **Cable Assemblies**: All LMR-240 cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

Part Description				Stock
Part Number	Application	Jacket	Color	Code
LMR-240	Outdoor	PE	Black	54021
LMR-240-DB	Outdoor/Watertight	PE	Black	54090
LMR-240-FR	Indoor/Outdoor Riser CMR	FRPE	Black	54029
LMR-240-FR-PVC	Indoor/Outdoor Riser CMR	FRPVC	Black	54214
LMR-240-PVC	General Purpose	PVC	Black	54140
LMR-240-PVC-W	General Purpose	PVC	White	54202
LMR-240-MA	Indoor & Mobile Antenna	PVC	Black	54046

Construction Specifications			
Description	Material	In.	(mm)
Inner Conductor	Solid BC	0.056	(1.42)
Dielectric	Foam PE	0.150	(3.81)
Outer Conductor	Aluminum Tape	0.155	(3.94)
Overall Braid	Tinned Copper	0.178	(4.52)
Jacket	(see table above)	0.240	(6.10)

Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	0.75	(19.1)
Bend Radius: repeated	in. (mm)	2.5	(63.5)
Bending Moment	ft-lb (N-m)	0.25	(0.34)
Weight	lb/ft (kg/m)	0.034	(0.05)
Tensile Strength	lb (kg)	80	(36.3)
Flat Plate Crush	lb/in. (kg/mm)	20	(0.36)

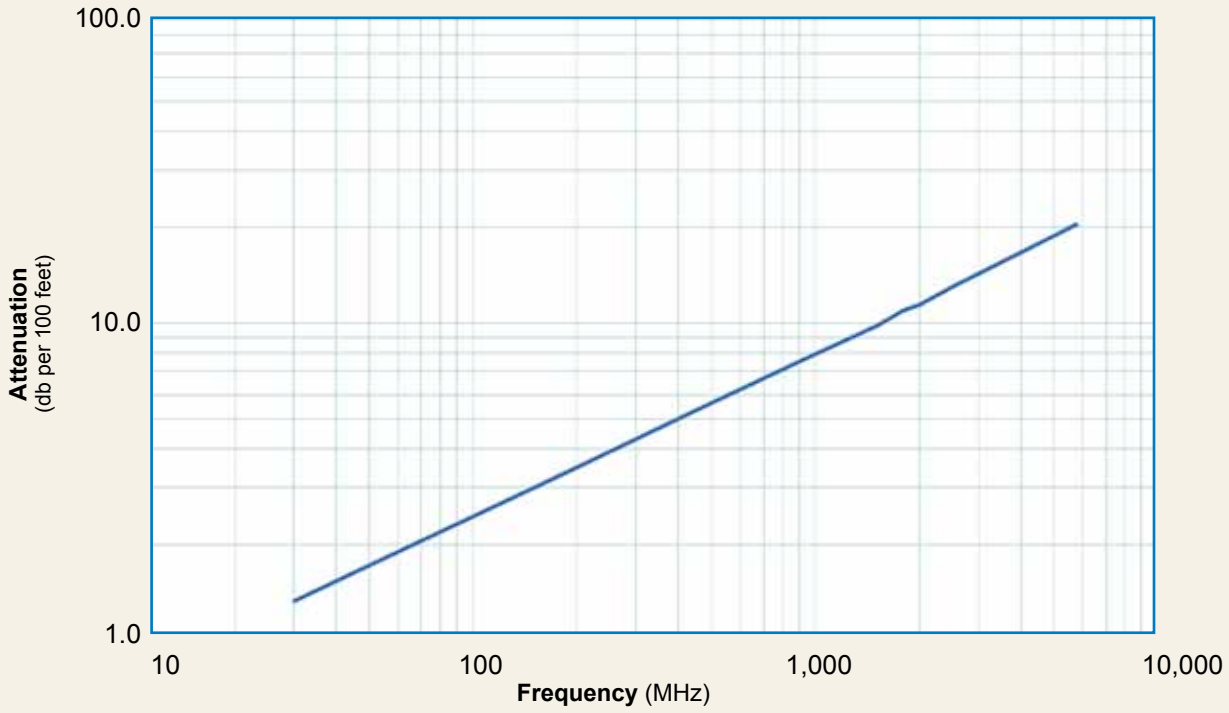
Environmental Specifications

Performance Property	°F	°C
Installation Temperature Range	-40/+185	-40/+85
Storage Temperature Range	-94/+185	-70/+85
Operating Temperature Range	-40/+185	-40/+85

Electrical Specifications

Performance Property	Units	US	(metric)
Velocity of Propagation	%	84	
Dielectric Constant	NA	1.42	
Time Delay	nS/ft (nS/m)	1.21	(3.97)
Impedance	ohms	50	
Capacitance	pF/ft (pF/m)	24.2	(79.4)
Inductance	uH/ft (uH/m)	0.060	(0.20)
Shielding Effectiveness	dB	>90	
DC Resistance			
Inner Conductor	ohms/1000ft (/km)	3.2	(10.5)
Outer Conductor	ohms/1000ft (/km)	3.89	(12.8)
Voltage Withstand	Volts DC	1500	
Jacket Spark	Volts RMS	5000	
Peak Power	kW	5.6	

Attenuation vs. Frequency (typical)



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	5800
Attenuation dB/100 ft	1.3	1.7	3.0	3.7	5.3	7.6	9.9	10.9	11.5	12.9	20.4
Attenuation dB/100 m	4.4	5.7	9.9	12.0	17.3	24.8	32.4	35.6	37.7	42.4	66.8
Avg. Power kW	1.49	1.15	0.66	0.54	0.38	0.26	0.20	0.18	0.17	0.15	0.10

Calculate Attenuation =

$(0.242080) \cdot \sqrt{FMHz} + (0.000330) \cdot FMHz$ (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)

Attenuation:
VSWR=1.0 ; Ambient = +25°C (77°F)

Power: VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F); Sea Level; dry air; atmospheric pressure; no solar loading

TIMES MICROWAVE SYSTEMS

LMR®-240
Flexible Low Loss Communications Coax

Connectors

Interface	Description	Part Number	Stock Code	VSWR** Freq. (GHz)		Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in	Length (mm)	Width in	Width (mm)	Weight lb	Weight (g)
1. F Male	Straight Plug	TC-240-FM-X	3190-2891	<1.25:1	(2.5)	Knurl	Solder	Crimp	N/G	1.1	(28)	0.45	(11.4)	0.014	(6.4)
2. N Male	Straight Plug	EZ-240-NMH-X	3190-2893	<1.25:1	(2.5)	Hex/Knurl	Spring Finger	Crimp	A/G	1.5	(38.1)	0.78	(19.8)	0.086	(39.0)
3. N Male	Right Angle	TC-240-NMH-RA-D	3190-2426	<1.35:1	(6)	Hex/Knurl	Solder	Crimp	A/G	1.2	(32.4)	1.22	(31.0)	0.091	(41.7)
4. N Male	Straight Plug	TC-240-NMH-X	3190-2887#	<1.25:1	(2.5)	Hex/Knurl	Solder	Crimp	N/S	1.5	(38)	0.75	(19.1)	0.086	(39.0)
5. N Male	Straight Plug	TC-240-NMC	3190-244	<1.25:1	(2.5)	Knurl	Solder	Clamp	S/G	1.5	(38)	0.75	(19.1)	0.082	(37.2)
6. 1.0/2.3 DIN	Straight Plug	EZ-240-1023M	3190-2512	<1.35:1	(2.5)	knurl	Spring Finger	Crimp	N/G	1.1	(228.5)	0.33	(8.5)	0.014	(6.63)
7. N Female	Bulkhead Jack	TC-240-NF-BH-X	3190-2888	<1.25:1	(2.5)	NA	Solder	Crimp	A/G	1.7	(44)	0.88	(22.2)	0.115	(52.2)
8. N Female	Panel Mount	TC-240-NF-PM-X	3190-2889#	<1.25:1	(6)	NA	Solder	Crimp	A/G	1.7	(44)	0.88	(22.2)	0.115	(52.2)
9. BNC Male	Straight Plug	TC-240-BMC	3190-242	<1.25:1	(2.5)	Knurl	Solder	Clamp	S/G	1.7	(43)	0.56	(14.2)	0.040	(18.1)
10. BNC Male	Straight Plug	TC-240-BM-X	3190-2890	<1.25:1	(2.5)	Knurl	Solder	Crimp	A/G	1.3	(34)	0.58	(14.7)	0.043	(19.5)
11. BNC Male	Straight Plug	TC-240-BM-RA-D	3190-2869	<1.25:1	(2)	Knurl	Solder	Crimp	A/G	1.0	(25.1)	0.57	(14.5)	0.115	(52.0)
12. TNC Male	Straight Plug	EZ-240-TM-X	3190-2725	<1.25:1	(2.5)	Knurl	Spring Finger	Crimp	N/G	1.4	(34.3)	0.59	(15.0)	0.043	(19.5)
13. TNC Male	Straight Plug	TC-240-TM-X	3190-2797	<1.25:1	(2.5)	Knurl	Solder	Crimp	N/G	1.7	(43)	0.59	(15.0)	0.043	(19.5)
14. TNC Male	Reverse Polarity	EZ-240-TM-RP-X	3190-2892	<1.25:1	(6)	Knurl	Spring Finger	Crimp	A/G	1.4	(36)	0.59	(15.0)	0.043	(19.5)
15. TNC Male	Right Angle	TC-240-TM-RA-D	3190-2798	<1.25:1	(6)	Hex	Solder	Crimp	A/G	1.0	(25.1)	0.62	(15.7)	0.115	(52.0)
16. QMA Male	Straight Plug	EZ-240-QM-X	3190-2894	<1.25:	(6)	Knurl	Spring Finger	Crimp	N/G	1.2	(30.0)	0.41	(10.5)	0.014	(6.35)
17. QMA Male	Right Angle	EZ-240-QM-RA-X	3190-2895	<1.25:	(<6)	Knurl	Spring Finger	Crimp	N/G	0.8	(20.3)	0.65	(16.5)	0.019	(8.62)
18. SMA Male	Straight Plug	EZ-240-SM-X	3190-2897	<1:25:	(6)	Hex	Spring Finger	Crimp	N/G	1.0	(25.4)	0.32	(8.1)	0.016	(7.26)
19. SMA Male	Straight Plug	TC-240-SM-SS-X	3190-2898#	<1.25:1	(10)	Hex	Solder	Crimp	SS/G	1.0	(25)	0.32	(8.1)	0.016	(7.3)
20. SMA Male	Right Angle	TC-240-SM-RA-SS-X	3190-2900#	<1.35:1	(6)	Hex	Solder	Crimp	SS/G	0.8	(20)	0.65	(16.5)	0.019	(8.6)
21. SMA Male	Right Angle	EZ-240-SM-RA-X	3190-2899	<1.25:1	(6)	Hex	Spring Finger	Crimp	A/G	0.9	(22.8)	0.31	(7.9)	0.019	(8.6)
22. SMA Male	Reverse Polarity	TC-240-SM-RP	3190-326	<1.25:1	(2.5)	Hex	Solder	Crimp	SS/G	1.0	(25)	0.32	(8.1)	0.016	(7.3)
23. SMA Female	Bulkhead Jack	TC-240-SF-SS-BH-X	3190-2896#	<1.25:1	(2.5)	NA	Solder	Crimp	SS/G	1.1	(29)	0.31	(7.9)	0.019	(8.6)
24. Mini-UHF	Straight Plug	TC-240-MUHF	3190-445	<1.25:1	(2.5)	Knurl	Solder	Crimp	N/G	1.1	(28)	0.45	(11.4)	0.014	(6.4)
25. 7/16 Din Male	Straight Plug	TC-240-716M	3190-2982	<1.35:1	(3)	Hex	Spring Finger	Crimp	A/S	2.0	(50.5)	1.26	(32.0)	0.186	(84.4)
26. 7/16 Din Male	Right Angle	TC-240-716M-RA-D	3190-2983	<1.35:1	(3)	Hex	Solder	Crimp	A/S	1.4	(34.3)	1.60	(40.6)	0.239	(108.5)
27. TNC Female	Straight Jack	EZ-240-TF	3190-2552	<1.35:1	(6)	NA	Spring Finger	Crimp	N/G	1.1	(27.0)	0.45	(11.4)	0.035	(15.9)

Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S240TT	GK-S240TT	Standard Ground Kit (each)

Install Tools

Type	Part Number	Stock Code	Description
Crimp Tool	CT-240/200/195/100	3190-667	Crimp tool for LMR-100, 195, 200 and 240 connectors
Strip Tool	CST-240A	3192-152	Prep tool for LMR-240 connectors
Deburr Tool	DBT-U	3192-001	Removes center conductor rough edges
Cutting Tool	CCT-01	3190-1544	Cable end flush cut tool
Replacement Blade	RB-01	3190-1609	Replacement blade for cutting tool
Replacement Blade Kit	RB-CST	3192-086	Replacement blade kit for all CST strip tools