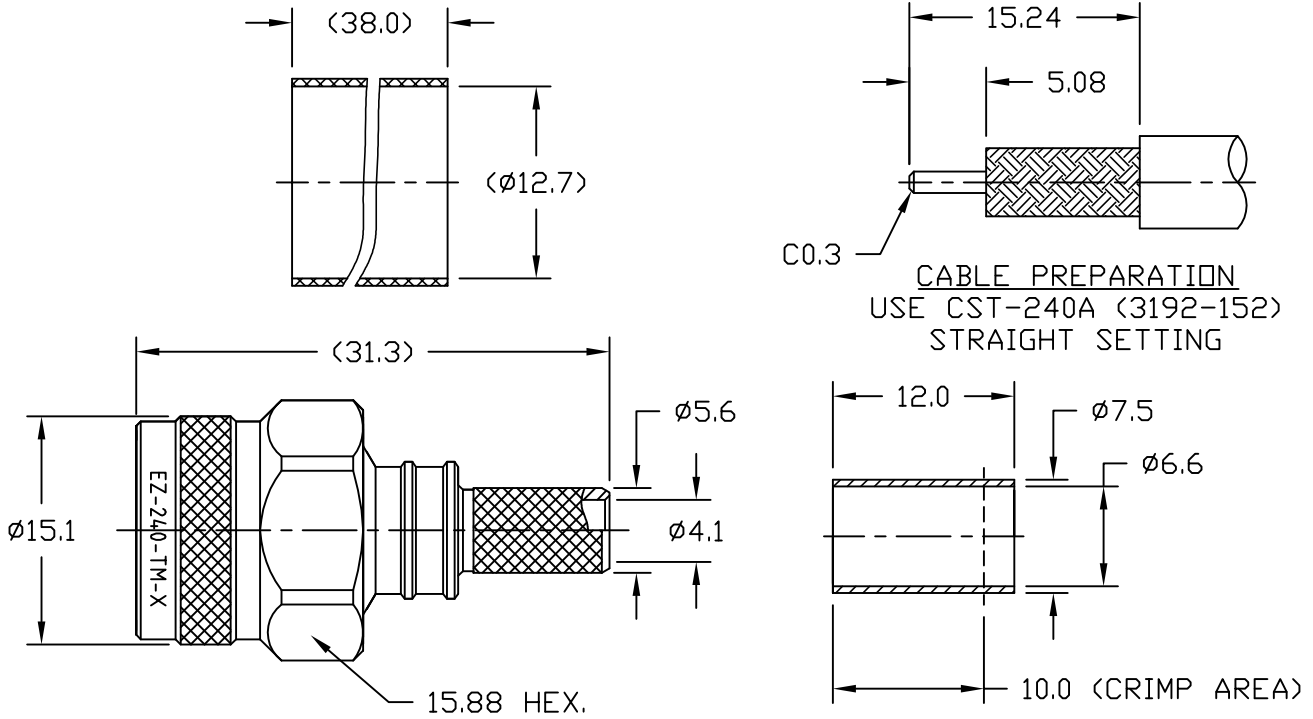


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| SYM | REVISION DESCRIPTION | DFTM | DATE | APPD | DATE |
|-----|-------------------------|----------|--------|----------|---------|
| A | RELEASED FOR PRODUCTION | D. J. H. | 2/1/12 | J. D. B. | 8/28/13 |



NOTES:

1. CRIMP THE FERRULE TO .255" HEX.
2. CONTACT PIN IS CAPTIVATED (EZ).

ALL PARTS SATISFIED ROHS REQUIREMENTS

| MATERIALS AND PLATING | | UNIT: MICRO-INCHES |
|-----------------------|------------------------|----------------------------|
| BODY/SHELL | BRASS PER C3604 | ALBALOY 80 MIN/COPPER |
| CONTACT PIN | PHOSPHOR BRONZE C54400 | GOLD 50 MIN/NICKEL/ COPPER |
| INSULATOR | TEFLON MIL-P-19468 | NATURAL |
| FERRULE | BRASS | ALBALOY 80 MIN/COPPER |

| MECHANICAL CHARACTERISTICS | |
|--------------------------------|---------------|
| Force to engage and disengage | N/A |
| Center contact retention force | 6 lbs MIN |
| Coupling torque | 20 lbf-in MIN |
| Coupling nut retention force | 60 lbs |
| Durability | ≥ 500 cycles |

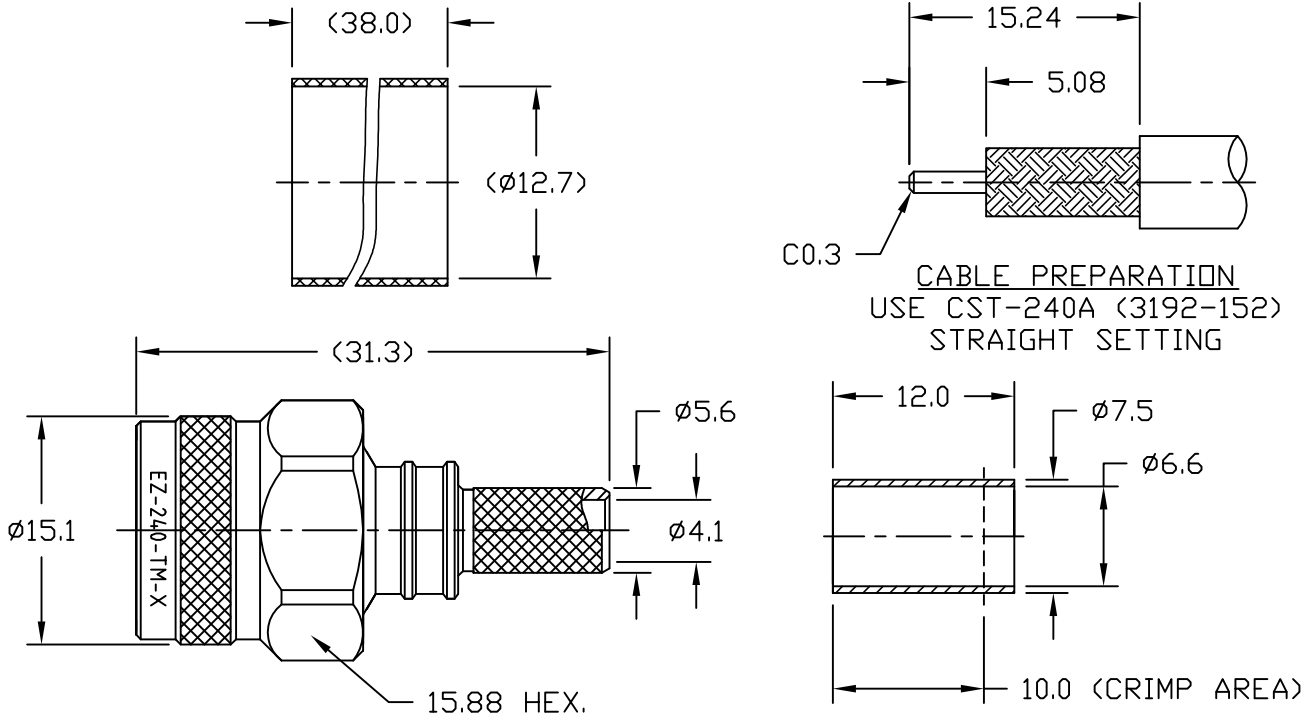
| ELECTRICAL CHARACTERISTICS | |
|---------------------------------|---|
| Impedance | 50 Ω |
| Voltage rating | 500V(rms) |
| Frequency range | 0~6GHz |
| Dielectric withstanding voltage | 750V |
| Contact resistance | Center contact ≤ 3mΩ Outer contact ≤ 2mΩ |
| Insulation resistance | ≥ 5000MΩ |
| Insertion loss | According to the cable |
| RF- leakage | N/A |
| VSWR | 1.25MAX@0-6GHz |

| ENVIRONMENTAL CHARACTERISTICS | |
|-------------------------------|-------------------------------------|
| Temperature range | -55°C- +155°C |
| Thermal shock | US MIL- STD 202, Meth. 107, Cond. B |
| Vibration | US MIL- STD 202, Meth. 204, Cond. B |
| Shock | US MIL- STD 202, Meth. 213, Cond. I |
| Climatic class | IEC 60068 65/165/21 |

| | | | | |
|--------------|---|----------------------|----------------|--|
| MATL: | UNLESS OTHERWISE SPECIFIED | | DFTM. D. J. H. | TIMES MICROWAVE SYSTEMS |
| | ALL DIMENSIONS ARE IN mm MACHINED SURFACES FINISH 1.6 RMS MAX. REMOVE ALL BURRS 0.15X45° MAX. BREAK MACHINE CORNERS 0.15X45° MAX. FILLET R. TOLERANCES ON DECIMALS .X ± 0.3 .XX ± 0.2 ANGLES ± 1/2° FRACTIONS ± N/A | | DATE 2/1/12 | |
| USED ON: O-4 | | | CHKD. J. D. B. | EZ-240-TM-X "TNC" MALE FOR LMR-240 CABLE EZ/CRIMP/NO BRAID TRIM |
| | | | DATE 8/28/13 | |
| SCALE: N/A | DWG. SIZE A | DO NOT SCALE DRAWING | APPD. J. D. B. | SHEET 1 of 1 SD3190-2725 REV A |
| | | CODE IDENT 68999 | DATE 8/28/13 | |

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| SYM | REVISION DESCRIPTION | DFTM | DATE | APPD | DATE |
|-----|-------------------------|----------|--------|----------|---------|
| A | RELEASED FOR PRODUCTION | D. J. H. | 2/1/12 | J. D. B. | 8/28/13 |



NOTES:

1. CRIMP THE FERRULE TO .255" HEX.
2. CONTACT PIN IS CAPTIVATED (EZ).

ALL PARTS SATISFIED ROHS REQUIREMENTS

| MATERIALS AND PLATING | | UNIT: MICRO-INCHES |
|-----------------------|------------------------|----------------------------|
| BODY/SHELL | BRASS PER C3604 | ALBALOY 80 MIN/COPPER |
| CONTACT PIN | PHOSPHOR BRONZE C54400 | GOLD 50 MIN/NICKEL/ COPPER |
| INSULATOR | TEFLON MIL-P-19468 | NATURAL |
| FERRULE | BRASS | ALBALOY 80 MIN/COPPER |

| MECHANICAL CHARACTERISTICS | |
|--------------------------------|---------------|
| Force to engage and disengage | N/A |
| Center contact retention force | 6 lbs MIN |
| Coupling torque | 20 lbf-in MIN |
| Coupling nut retention force | 60 lbs |
| Durability | ≥ 500 cycles |

| ELECTRICAL CHARACTERISTICS | |
|---------------------------------|---|
| Impedance | 50 Ω |
| Voltage rating | 500V(rms) |
| Frequency range | 0~6GHz |
| Dielectric withstanding voltage | 750V |
| Contact resistance | Center contact ≤ 3mΩ Outer contact ≤ 2mΩ |
| Insulation resistance | ≥ 5000MΩ |
| Insertion loss | According to the cable |
| RF- leakage | N/A |
| VSWR | 1.25MAX@0-6GHz |

| ENVIRONMENTAL CHARACTERISTICS | |
|-------------------------------|-------------------------------------|
| Temperature range | -55°C- +155°C |
| Thermal shock | US MIL- STD 202, Meth. 107, Cond. B |
| Vibration | US MIL- STD 202, Meth. 204, Cond. B |
| Shock | US MIL- STD 202, Meth. 213, Cond. I |
| Climatic class | IEC 60068 65/165/21 |

| | | | | |
|--------------|---|------------------|----------------|--|
| MATL: | UNLESS OTHERWISE SPECIFIED | | DFTM. D. J. H. | TIMES MICROWAVE SYSTEMS |
| | ALL DIMENSIONS ARE IN mm MACHINED SURFACES FINISH 1.6 RMS MAX. REMOVE ALL BURRS 0.15X45° MAX. BREAK MACHINE CORNERS 0.15X45° MAX. FILLET R. TOLERANCES ON DECIMALS .X ± 0.3 .XX ± 0.2 ANGLES ± 1/2° FRACTIONS ± N/A | | DATE 2/1/12 | |
| USED ON: O-4 | DO NOT SCALE DRAWING | | CHKD. J. D. B. | EZ-240-TM-X "TNC" MALE FOR LMR-240 CABLE EZ/CRIMP/NO BRAID TRIM |
| | | | DATE 8/28/13 | |
| SCALE: N/A | DWG. SIZE A | CODE IDENT 68999 | APPD. J. D. B. | SHEET 1 of 1 SD3190-2725 REV A |
| | | DATE 8/28/13 | | |

LMR[®]-240-UF UltraFlex Communications Coax

Ideal for...

- Jumper Assemblies in Wireless Communications Systems
- Short Antenna Feeder runs (e.g. WLL, GPS, LMR, Mobile Antennas)
- Any application that requires periodic/repeated flexing



• **LMR[®] - UltraFlex** has a stranded center conductor and rubber outer jacket designed for multiple bending/flexing cycles. It is used for both indoor and outdoor applications.

• **Flexibility** and bendability are hallmarks of the LMR-240-UF 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-UF. 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-UF cables are designed for outdoor exposure and have a life expectancy in excess of 10 years.

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

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

| Construction Specifications | | | |
|-----------------------------|-------------------------------|-------|--------|
| Description | Material | In. | (mm) |
| Inner Conductor | Stranded BC | 0.056 | (1.42) |
| Dielectric | Foam Polyethylene | 0.150 | (3.81) |
| Outer Conductor | Aluminum Tape | 0.155 | (3.94) |
| Overall Braid | Tinned Copper | 0.178 | (4.52) |
| Jacket | Black Thermoplastic Elastomer | 0.240 | (6.10) |

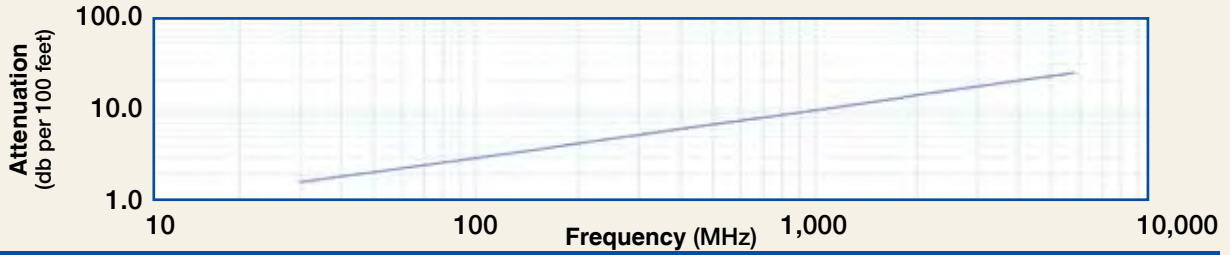
| Mechanical Specifications | | | |
|---------------------------|----------------|-------|----------|
| Performance Property | Units | US | (metric) |
| Bend Radius: installation | in. (mm) | 0.75 | (19.1) |
| Bend Radius: repeated | in. (mm) | 2.5 | (63.5) |
| Bending Moment | ft-lb (N-m) | 0.125 | (0.17) |
| Weight | lb/ft (kg/m) | 0.034 | (0.05) |
| Tensile Strength | lb (kg) | 80 | (36.3) |
| Flat Plate Crush | lb/in. (kg/mm) | 13 | (0.23) |

| 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) | 4.28 | (14.1) |
| Outer Conductor | ohms/1000ft (/km) | 3.89 | (12.8) |
| Voltage Withstand | Volts DC | 1500 | |
| Jacket Spark | Volts RMS | 5000 | |
| Peak Power | kW | 5.6 | |

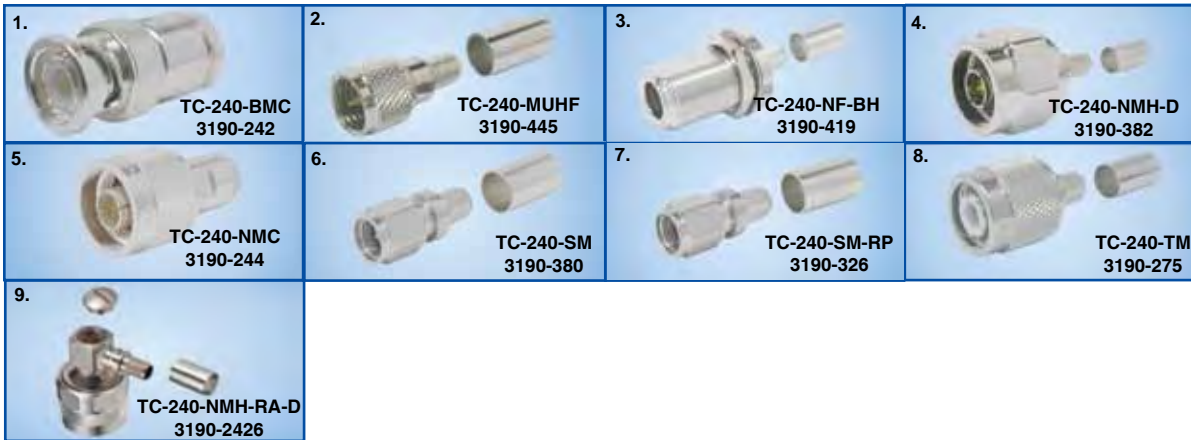
| Part Description | | | | |
|------------------|----------------|--------|-------|------------|
| Part Number | Application | Jacket | Color | Stock Code |
| LMR-240-UF | Indoor/Outdoor | TPE | Black | 54041 |

Attenuation vs. Frequency (typical)



| Frequency (MHz) | 30 | 50 | 150 | 220 | 450 | 900 | 1500 | 1800 | 2000 | 2500 | 5800 |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|
| Attenuation dB/100 ft | 1.6 | 2.1 | 3.6 | 4.4 | 6.3 | 9.1 | 11.8 | 13.0 | 13.8 | 15.5 | 24.4 |
| Attenuation dB/100 m | 5.3 | 6.8 | 11.9 | 14.4 | 20.8 | 29.8 | 38.9 | 42.8 | 45.2 | 50.9 | 80.1 |
| Avg. Power kW | 1.24 | 0.96 | 0.55 | 0.45 | 0.31 | 0.22 | 0.17 | 0.15 | 0.14 | 0.13 | 0.08 |

Calculate Attenuation = (0.290501) • √FMHz + (0.000396) • 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



Connectors

| Interface | Description | Part Number | Stock Code | VSWR** Freq. (GHz) | Coupling Nut | Inner Contact Attach | Outer Contact Attach | Finish* /Pin | Length in (mm) | Width in (mm) | Weight lb (g) |
|-------------|------------------|-----------------|------------|--------------------|--------------|----------------------|----------------------|--------------|----------------|---------------|---------------|
| 1. 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) |
| 2. 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) |
| 3. N Female | Bulkhead Jack | TC-240-NF-BH | 3190-419 | <1.25:1 (2.5) | NA | Solder | Crimp | A/G | 1.7 (44) | 0.88(22.2) | 0.115 (52.2) |
| 4. N Male | Straight Plug | TC-240-NMH-D | 3190-382 | <1.25:1 (2.5) | Hex | 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. SMA Male | Straight Plug | TC-240-SM | 3190-380 | <1.25:1 (10) | Hex | Solder | Crimp | SS/G | 1.0 (25) | 0.32(8.1) | 0.016 (7.3) |
| 7. 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) |
| 8. TNC Male | Straight Plug | TC-240-TM | 3190-275 | <1.25:1 (2.5) | Knurl | Solder | Crimp | N/S | 1.7 (43) | 0.59(15.0) | 0.043 (19.5) |
| 9. 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) |

* Finish metals: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alballoy **VSWR spec based on 3 foot cable with a connector pair

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 |
| Cutting Tool | CCT-01 | 3190-1544 | Cable end flush cut tool |
| Replacement Blade | RB-01 | 3190-1609 | Replacement blade for cutting tool |

