CABLE ASSEMBLIES

*Flexible low loss cable 6.1/50 S+F*
*(AEP-240FR alternative to LMR-240FR®)*



## P/N: C291 327 030

**APPLICATION NOTE**

AEP-240FR cable is an alternative solution to 50 Ohms LMR-240FR® cable offering the same performance and similar construction with cost advantage.

## REGULATIONS

RoHS compliant
UL/NEC: CMR
UL/CSA: FT4

## CONNECTORS COMPATIBLE WITH AEP-240FR (and to LMR® 240FR)

### QMA Series

| P/N | Interface | Model |
|---|---|---|
| R123 076 310 | Straight plug | Crimp type |
| R123 177 100 | R/a plug | Crimp type |
| R123 314 010 | Straight bh jack | Crimp type |
| R123W 076 310 | Wp straight plug | Crimp type |
| R123W 177 110 | Wp r/a plug | Crimp type |

### SMA Series

| P/N | Interface | Model |
|---|---|---|
| R124 076 430 | Straight plug | Crimp type |
| R124 175 310 | R/A plug | Crimp type |

### TNC Series

| P/N | Interface | Model |
|---|---|---|
| R143 084 161 | Straight plug | Crimp type |

### N Series

| P/N | Interface | Model |
|---|---|---|
| R161 075 030 | Straight plug | Crimp type |
| R161 183 310 | R/A plug | Crimp type |
| R161 329 140 | Straight bh jack | Crimp type |

### QN Series

| P/N | Interface | Model |
|---|---|---|
| R164 075 010 | Straight plug | Crimp type |

### 7/16 Series

| P/N | Interface | Model |
|---|---|---|
| R185 085 007 | Straight plug | Crimp type |
| R185 320 020 | Straight BH jack | Crimp type |

(1) BC = Bare Copper
(2) PE = PolyEt hylene

## CONSTRUCTION / DIMENSIONS

| | Material | mm | Inches |
|---|---|---|---|
| Center conductor | Solid BC (1) | 1.42 | 0.056 |
| Dielectric | Foam PE(2) | 3.81 | 0.15 |
| Inner shield | Aluminum Tape | 3.94 | 0.155 |
| Outer shield | Tinned Copper braid | 4.52 | 0.178 |
| Outer jacket | Black LSZH | 6.1 | 0.24 |

## ELECTRICAL CHARACTERISTICS

| | | |
|---|---|---|
| Characteristic impedance | 50 ohms | |
| Operating frequency range | DC - 6 GHz | |
| Dielectric constant | 1.42 | |
| Screening effectiveness | > 90 dB | |
| Velocity of propagation | 84 % | |
| Capacitance | 79.4 pF / m | 24.2 pF / ft |
| Inductance | 0.20 uH / m | 0.060 uH / ft |
| Time delay | 3.97 nS / m | 1.21 nS / ft |
| Inner conductor dc resistance | 10.5 ohms / km | 3.2 ohms / 1000 ft |
| Outer conductor dc resistance | 12.8 ohms / km | 3.89 ohms / 1000 ft |
| Voltage withstand | 1500 Volts DC | |
| Jacket spark | 5000 Volts RMS | |
| Peak power | 5.6kW | |
| Phase stability over temp | < 25 ppm / deg C | |

## MECHANICAL CHARACTERISTICS

| | | |
|---|---|---|
| Maximum weight | 0.05 kg / m | 0.034 lb / ft |
| Min. bend radius: installation | 19.1 mm | 0.75 inch |
| Min. bend radius: repeated | 63.5 mm | 2.5 inch |
| Bending moment | 0.34 N-m | 0.25 ft-lb |
| Tensile strength | 36.3 kg | 80 lb |
| Flat plate crush | 0.36 kg / mm | 20 lb / inch |

## ENVIRONMENTAL CHARACTERISTICS

| | | |
|---|---|---|
| Installation temperature range | -40 / +85 °C | -40 / +185 °F |
| Storage temperature range | -70 / +85 °C | -94 / +185 °F |
| Operating temperature range | -40 / +85 °C | -40 / +185 °F |

## FREQUENCY / ATTENUATION (typ.) / AVG POWER (*)

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

(*) = Avg power calculated at sea level / 40°C and VSWR 1:0
(Cable-assembly power ratings may be limited by the connector type. Please contact us for specific needs)