

## QA220

### Ultra Low Loss & Phase Stable

#### Features:

- \* Low Insertion Loss
- \* High Phase Stability
- \* High Power
- \* Low PIM

#### Applications:

- \* Phased-array Radar
- \* Satellite Communication
- \* Avionics

#### Electrical

|                          |                         |
|--------------------------|-------------------------|
| Frequency:               | DC-50GHz                |
| Cut-off Frequency:       | 83GHz                   |
| Impedance:               | 50Ω                     |
| Velocity of Propagation: | 81%                     |
| Shielding Effectiveness: | 90dB min.               |
| Voltage Withstand:       | 400V DC                 |
| PIM:                     | -155dBc                 |
| Phase Stability:         | 750PPM@-55°C~+85°C max. |

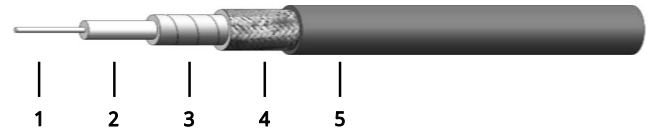
#### Mechanical

|                             |        |
|-----------------------------|--------|
| Bend Radius (installation): | 8.8mm  |
| Bend Radius (repeated):     | 22.0mm |
| Weight:                     | 16g/m  |

#### Environmental

Temperature: -55~+125°C

#### Construction



| No. | Name            | Size (mm) | Material                   |
|-----|-----------------|-----------|----------------------------|
| 1   | Inner Conductor | 0.50      | Silver-plated copper       |
| 2   | Dielectric      | 1.38      | Low density PTFE           |
| 3   | Inner Shield    | 1.54      | Silver-plated copper tape  |
| 4   | Outer Shield    | 1.95      | Silver-plated copper braid |
| 5   | Jacket          | 2.20      | PFA                        |

#### Attenuation & Power Handling

| Frequency (GHz)         | 0.3  | 0.5  | 1    | 2    | 6     | 10    | 12.4  | 18    | 26.5 | 35    | 40  | 50    |
|-------------------------|------|------|------|------|-------|-------|-------|-------|------|-------|-----|-------|
| Attenuation*1 (dB/100m) | 34.6 | 44.8 | 63.7 | 90.8 | 160.4 | 209.8 | 235.2 | 287.1 | 354  | 412.4 | 444 | 502.8 |
| Average Power*2 (W)     | 178  | 137  | 97   | 68   | 38    | 29    | 26    | 21    | 17   | 15    | 14  | 12    |

[1] VSWR:1.0; Ambient: +25°C (77°F)

[2] VSWR:1.0; Ambient: +40°C (104°F); Sea level

Calculate Cable Attenuation: Attenuation (dB/100m) =  $1.975832 * \sqrt{F \text{ (MHz)}} + 0.001221 * F \text{ (MHz)}$

Calculate Connector Attenuation: Attenuation (dB) =  $0.03 * \sqrt{F \text{ (GHz)}}$

#### How To Order

##### QA220-X-Y-Z

X: Frequency in GHz

Y: Connector type

Z: Length in meters

#### Examples:

To order a QA220 cable assembly, DC-50GHz, 2.4mm male to 2.4mm female, 0.8 meter, specify QA220-50-22F-0.8.

#### Connector naming rules:

V - 1.85mm (50GHz, VSWR 1.5)

G - Mini-SMP (mateable with GPP0 & SSMP, 50GHz, VSWR 1.6)

2 - 2.4mm (50GHz, VSWR 1.4)

K - 2.92mm (40GHz, VSWR 1.35)

A - SSMA (40GHz, VSWR 1.35)

P - SMP (40GHz, VSWR 1.4)

3 - 3.5mm (33GHz, VSWR 1.35)

S - SMA (26.5GHz, VSWR 1.3)

Female Connector - Add 'F' after connector name

Right Angle - Add 'R' after connector name (VSWR increase 0.1)

**Mating Connector**

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**QCV-MG-A220-2**

1.85mm male, Stainless steel

**QCV-FG-A220-1**

1.85mm female, Stainless steel

**QC2-MG-A220-5**

2.4mm male, Stainless steel

**QCK-MG-A220-4**

2.92mm male, Stainless steel

**QCK-FB-A220-1**

2.92mm female, Brass

**QCK-FHG-086-1**

2.92mm female bulk head, Stainless steel

**QCP-MB-086-1**

SMP male, Brass

**QCP-FB-A220-1**

SMP female, Brass

**QCP-FL2B-A220-1**

SMP female, 2-hole flange mount, Brass

**QCS-MG-086-3**

SMA male, Stainless steel

**QCS-MB-086-4**

SMA male, Brass

**QCS-FB-086-2**

SMA female, Brass

