STRIPLINE SURFACE MOUNT

# Power Splitter/Combiner

# QCH-63+

50Ω 2000 to 6000 MHz 2-Way 90° 200W

## KEY FEATURES

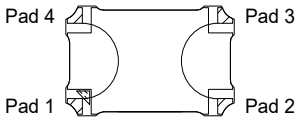
- High power handling, up to 200W
- Ultra wide bandwidth
- Excellent phase unbalance, ±1.5 deg

*Generic photo used for illustration purposes only*

## APPLICATIONS

- Balanced amplifiers
- I&Q modulators
- Defense and military

## FUNCTIONAL DIAGRAM




## PRODUCT OVERVIEW

Mini-Circuits' QCH-63+ is a 2-way 90° power splitter, capable of handling up to 200W with amplitude unbalance of ±1.4 dB typ and phase unbalance of ±1.5 deg. typ. Operating over a frequency range of 2000 to 6000 MHz, the outstanding phase and amplitude unbalance make this component a versatile building block for use in a variety of systems and sub-system designs from balanced amplifiers and antenna feeds to military applications and more. The splitter is fabricated using laminated PCB process (0.56 x 0.35 x 0.093") and includes wrap-around terminations for good solderability and easy visual inspection.

## ELECTRICAL SPECIFICATIONS [1, 2] AT +25°C

| Parameter | Conditions (MHz) | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Frequency Range | – | 2000 | – | 6000 | MHz |
| Mainline Loss [3] | 2000 - 6000 | – | 0.20 | 0.40 | dB |
| Isolation | 2000 - 6000 | 18 | 26 | – | dB |
| Phase Unbalance | 2000 - 6000 | – | ±1.50 | ±7.50 | deg |
| Amplitude Unbalance | 2000 - 6000 | – | ±1.40 | ±1.50 | dB |
| Return Loss | 2000 - 6000 | 17.5 | 23 | – | dB |
| Thermal Resistance [4] | 2000 - 6000 | – | 0.35 | – | °C/W |

1. Tested in Evaluation Board TB-906+. De-embbeded to the device reference plane.
2. Model is symmetrical and all ports are interchangeable, see Port Function Description/Configuration table for details and S-Parameters for actual performance.
3. Does not include theoretical loss due to coupling. Nominal theoretical loss is 3 dB.
4. Thermal Resistance is defined as Θjc= (Hot Spot Temperature on DUT - Base Plate Temperature)/Input Power.

## ABSOLUTE MAXIMUM RATINGS [5]

| | | |
|---|---|---|
| **Operating Case Temperature [6]** | | -55°C to +105°C |
| **Storage Temperature** | | -55°C to +105°C |
| **Power Input** | **+85°C case** | 200 W |
| | **+95°C case** | 150 W |
| | **+105°C case** | 120 W |

5. Permanent damage may occur if any of these limits are exceeded.
6. Case temperature is defined as temperature on base plate.

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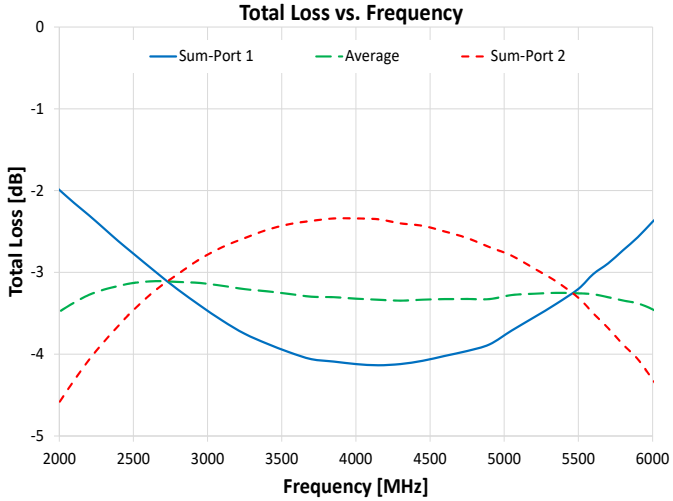
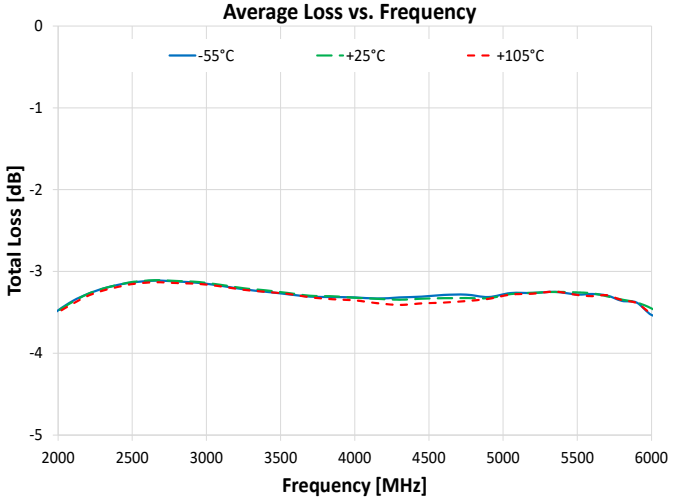
## TYPICAL PERFORMANCE GRAPHS*

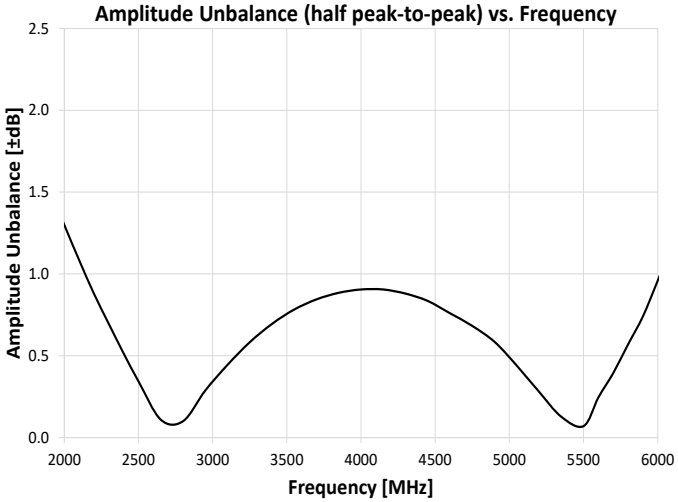
QCH-63+
Total Loss vs. Frequency



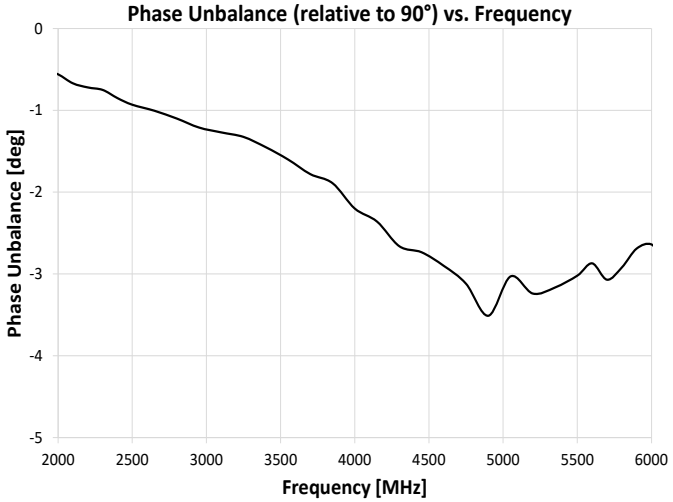

QCH-63+
Average Loss vs. Frequency



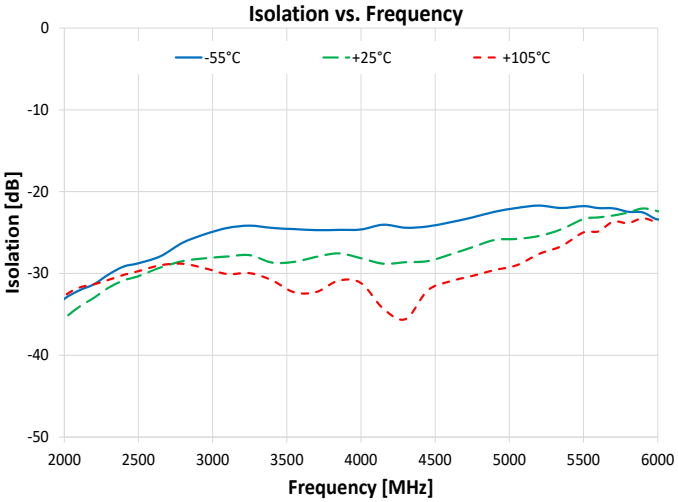

QCH-63+
Amplitude Unbalance (half peak-to-peak) vs. Frequency



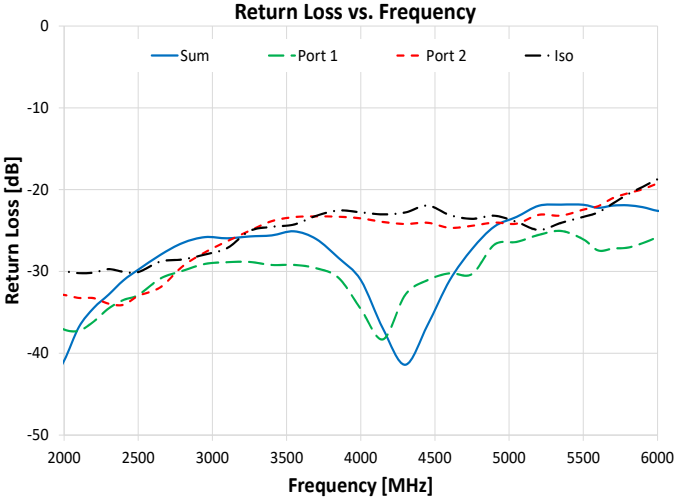

QCH-63+
Phase Unbalance (relative to 90°) vs. Frequency




QCH-63+
Isolation vs. Frequency




QCH-63+
Return Loss vs. Frequency




* Data corresponds to Configuration A at +25°C unless otherwise specified.

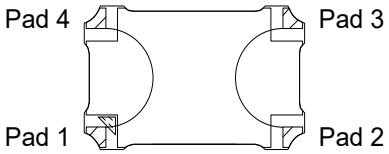
STRIPLINE SURFACE MOUNT

# Power Splitter/Combiner

# QCH-63+

50Ω 2000 to 6000 MHz 2-Way 90° 200W

## FUNCTIONAL DIAGRAM



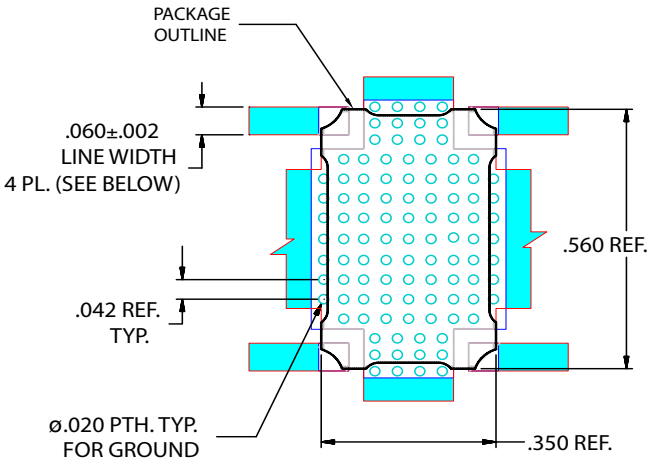

## PAD DESCRIPTION/CONFIGURATION [7]

| Function | Pad | Description |
|---|---|---|
| Sum | 1 | Sum port |
| Isolation | 2 | Isolation port |
| Port 2 (90°) | 3 | 90° port |
| Port 1 (0°) | 4 | 0° port |
| Ground | 5 | Ground |

| Configuration | Sum | Isolation | Port 1 (0°) | Port 2 (90°) |
|---|---|---|---|---|
| A | 1 | 2 | 4 | 3 |
| B | 2 | 1 | 3 | 4 |
| C | 3 | 4 | 2 | 1 |
| D | 4 | 3 | 1 | 2 |

7. Model is symmetrical and all ports are interchangeable, see Port Function Configurations table and s-parameters for actual performance.

## SUGGESTED PCB LAYOUT (PL-528)

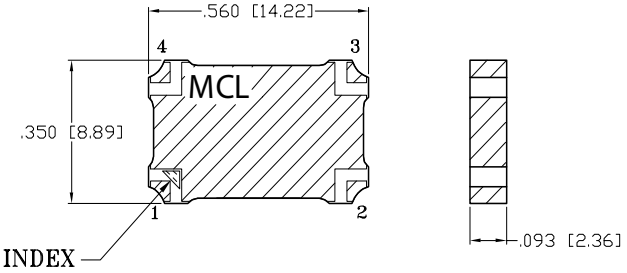


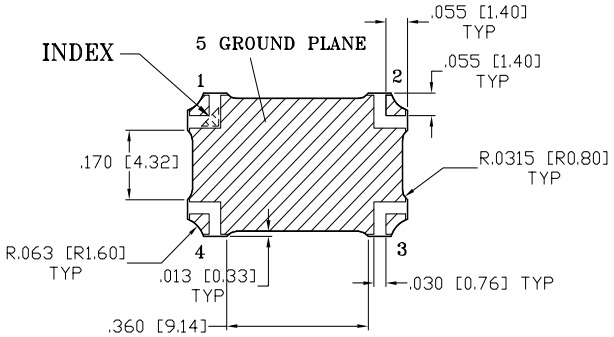

NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RT/DUROID5880 WITH DIELECTRIC THICKNESS 0.02"±.0015". COPPER: 1 OZ. EACH SIDE.
   FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## CASE STYLE DRAWING (PQ2186)




Metallization Solder Resist

NOTES:
1. Base material: Printed wiring laminate.
2. Termination finish: 2-5 µinch (.05-.13 microns) Immersion Gold.
3. Weight: 1.4 grams
4. Marking may contain other features or characters for internal lot control.

## PRODUCT MARKING*: QCH-63+

* Marking may contain other features or characters for internal lot control.

STRIPLINE SURFACE MOUNT

# Power Splitter/Combiner

# QCH-63+

50Ω 2000 to 6000 MHz 2-Way 90° 200W

## ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASH BOARD

CLICK HERE

| | |
|---|---|
| **Performance Data & Graphs** | Data<br>Graphs<br>S-Parameter (S4P files) data set (.zip file) de-embedded to device pads |
| **Case Style** | PQ2186 Lead finish: 2-5 inch (0.05-0.13 microns) immersion gold |
| **RoHS Status** | Compliant |
| **Tape and Reel** | F118 |
| **Suggested Layout for PCB Design** | PL-528 |
| **Evaluation Board** | TB-906+<br>Gerber file |
| **Environmental Rating** | ENV02T8 |

NOTES:

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at https://www.minicircuits.com/terms/viewterm.html

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration A.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.24 | -6.39 | -4.54 | 2.58 | -0.06 | -53.88 | -33.20 | -30.34 | -33.79 | -32.84 |
| 1600 | -1.38 | -5.95 | -4.24 | 2.29 | -0.10 | -46.31 | -37.10 | -32.26 | -32.64 | -30.51 |
| 1700 | -1.52 | -5.56 | -3.99 | 2.02 | -0.12 | -41.37 | -49.05 | -35.44 | -32.93 | -29.51 |
| 1800 | -1.67 | -5.20 | -3.78 | 1.77 | -0.16 | -38.06 | -46.63 | -38.59 | -33.67 | -29.83 |
| 1900 | -1.83 | -4.88 | -3.62 | 1.53 | -0.19 | -34.88 | -38.88 | -39.60 | -32.42 | -29.71 |
| 2000 | -1.99 | -4.58 | -3.48 | 1.30 | -0.25 | -33.11 | -35.59 | -38.30 | -31.54 | -29.41 |
| 2100 | -2.14 | -4.31 | -3.36 | 1.09 | -0.34 | -32.07 | -33.15 | -37.94 | -31.85 | -29.73 |
| 2200 | -2.30 | -4.07 | -3.27 | 0.89 | -0.40 | -31.32 | -31.45 | -36.24 | -32.70 | -29.71 |
| 2300 | -2.46 | -3.85 | -3.21 | 0.70 | -0.40 | -30.10 | -29.94 | -34.43 | -32.94 | -28.64 |
| 2400 | -2.62 | -3.65 | -3.17 | 0.52 | -0.49 | -29.15 | -28.86 | -33.72 | -31.53 | -28.26 |
| 2500 | -2.77 | -3.47 | -3.13 | 0.35 | -0.57 | -28.75 | -28.80 | -32.47 | -30.34 | -28.19 |
| 2650 | -3.00 | -3.22 | -3.11 | 0.11 | -0.67 | -27.87 | -27.70 | -29.19 | -31.17 | -27.43 |
| 2800 | -3.22 | -3.02 | -3.12 | 0.10 | -0.75 | -26.22 | -25.37 | -26.43 | -30.14 | -26.47 |
| 2950 | -3.43 | -2.84 | -3.14 | 0.30 | -0.80 | -25.19 | -24.32 | -25.69 | -28.31 | -24.96 |
| 3100 | -3.61 | -2.69 | -3.17 | 0.46 | -0.81 | -24.43 | -23.17 | -24.92 | -25.78 | -23.57 |
| 3250 | -3.78 | -2.57 | -3.22 | 0.60 | -0.76 | -24.15 | -22.74 | -24.75 | -23.80 | -22.14 |
| 3400 | -3.90 | -2.48 | -3.25 | 0.71 | -0.69 | -24.43 | -22.70 | -25.00 | -22.74 | -22.19 |
| 3550 | -4.00 | -2.41 | -3.28 | 0.80 | -0.71 | -24.58 | -22.83 | -25.36 | -22.06 | -21.98 |
| 3700 | -4.07 | -2.38 | -3.31 | 0.85 | -0.80 | -24.70 | -23.59 | -26.57 | -21.48 | -21.63 |
| 3850 | -4.10 | -2.35 | -3.31 | 0.88 | -0.85 | -24.67 | -24.59 | -29.65 | -21.38 | -21.32 |
| 4000 | -4.10 | -2.36 | -3.32 | 0.88 | -1.03 | -24.62 | -26.65 | -33.28 | -21.91 | -22.19 |
| 4150 | -4.11 | -2.38 | -3.33 | 0.87 | -1.53 | -24.04 | -29.84 | -40.21 | -22.14 | -22.51 |
| 4300 | -4.06 | -2.42 | -3.32 | 0.83 | -1.64 | -24.40 | -32.71 | -36.61 | -22.02 | -22.05 |
| 4450 | -4.02 | -2.46 | -3.31 | 0.78 | -2.21 | -24.25 | -31.90 | -29.01 | -22.50 | -21.32 |
| 4600 | -3.96 | -2.49 | -3.29 | 0.74 | -2.22 | -23.74 | -27.25 | -27.28 | -22.39 | -21.06 |
| 4750 | -3.88 | -2.59 | -3.28 | 0.64 | -2.60 | -23.16 | -23.81 | -25.15 | -21.10 | -20.53 |
| 4900 | -3.84 | -2.71 | -3.31 | 0.56 | -2.97 | -22.45 | -21.26 | -23.14 | -20.44 | -20.42 |
| 5050 | -3.67 | -2.81 | -3.26 | 0.42 | -2.47 | -21.99 | -20.49 | -22.84 | -20.54 | -20.47 |
| 5200 | -3.58 | -2.92 | -3.26 | 0.32 | -2.46 | -21.70 | -19.61 | -21.61 | -20.17 | -20.54 |
| 5350 | -3.37 | -3.12 | -3.25 | 0.12 | -2.02 | -21.99 | -19.92 | -21.79 | -20.54 | -21.96 |
| 5500 | -3.20 | -3.36 | -3.28 | 0.09 | -1.81 | -21.76 | -19.95 | -22.06 | -19.76 | -23.03 |
| 5600 | -2.97 | -3.56 | -3.28 | 0.30 | -1.83 | -22.00 | -20.52 | -22.52 | -19.78 | -22.97 |
| 5700 | -2.87 | -3.68 | -3.29 | 0.41 | -1.60 | -22.03 | -21.07 | -21.73 | -19.52 | -22.94 |
| 5800 | -2.66 | -3.96 | -3.36 | 0.64 | -1.87 | -22.45 | -21.15 | -22.07 | -18.66 | -21.83 |
| 5900 | -2.56 | -4.07 | -3.38 | 0.75 | -1.72 | -22.53 | -21.63 | -24.14 | -18.48 | -21.44 |
| 6000 | -2.38 | -4.44 | -3.53 | 1.02 | -2.34 | -23.39 | -21.90 | -23.45 | -17.66 | -19.09 |
| 6100 | -2.19 | -4.59 | -3.55 | 1.19 | -1.97 | -22.89 | -22.92 | -23.57 | -17.57 | -18.84 |
| 6200 | -2.01 | -4.86 | -3.66 | 1.42 | -1.79 | -22.80 | -23.92 | -24.19 | -17.00 | -18.00 |
| 6300 | -1.88 | -5.24 | -3.88 | 1.68 | -2.37 | -23.36 | -23.46 | -24.00 | -15.96 | -16.70 |
| 6400 | -1.71 | -5.54 | -4.03 | 1.92 | -2.30 | -23.28 | -24.30 | -24.99 | -15.58 | -15.71 |
| 6500 | -1.54 | -5.89 | -4.24 | 2.18 | -2.29 | -23.41 | -24.66 | -25.33 | -15.29 | -15.16 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration B.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.24 | -6.41 | -4.55 | 2.59 | 0.25 | -58.55 | -32.84 | -33.79 | -30.34 | -33.20 |
| 1600 | -1.39 | -5.97 | -4.26 | 2.29 | 0.29 | -47.77 | -30.51 | -32.64 | -32.26 | -37.10 |
| 1700 | -1.54 | -5.58 | -4.01 | 2.02 | 0.30 | -42.54 | -29.51 | -32.93 | -35.44 | -49.05 |
| 1800 | -1.69 | -5.22 | -3.80 | 1.76 | 0.34 | -39.02 | -29.83 | -33.67 | -38.59 | -46.63 |
| 1900 | -1.85 | -4.90 | -3.64 | 1.52 | 0.35 | -35.41 | -29.71 | -32.42 | -39.60 | -38.88 |
| 2000 | -2.01 | -4.60 | -3.50 | 1.30 | 0.39 | -33.25 | -29.41 | -31.54 | -38.30 | -35.59 |
| 2100 | -2.17 | -4.33 | -3.38 | 1.08 | 0.40 | -32.08 | -29.73 | -31.85 | -37.94 | -33.15 |
| 2200 | -2.33 | -4.08 | -3.29 | 0.88 | 0.42 | -31.03 | -29.71 | -32.70 | -36.24 | -31.45 |
| 2300 | -2.48 | -3.86 | -3.22 | 0.69 | 0.44 | -29.68 | -28.64 | -32.94 | -34.43 | -29.94 |
| 2400 | -2.64 | -3.66 | -3.18 | 0.51 | 0.48 | -28.64 | -28.26 | -31.53 | -33.72 | -28.86 |
| 2500 | -2.80 | -3.48 | -3.15 | 0.34 | 0.52 | -28.21 | -28.19 | -30.34 | -32.47 | -28.80 |
| 2650 | -3.03 | -3.24 | -3.13 | 0.11 | 0.53 | -27.40 | -27.43 | -31.17 | -29.19 | -27.70 |
| 2800 | -3.24 | -3.03 | -3.14 | 0.11 | 0.57 | -26.19 | -26.47 | -30.14 | -26.43 | -25.37 |
| 2950 | -3.45 | -2.85 | -3.16 | 0.30 | 0.59 | -25.30 | -24.96 | -28.31 | -25.69 | -24.32 |
| 3100 | -3.64 | -2.71 | -3.20 | 0.47 | 0.68 | -24.77 | -23.57 | -25.78 | -24.92 | -23.17 |
| 3250 | -3.82 | -2.59 | -3.25 | 0.62 | 0.84 | -24.40 | -22.14 | -23.80 | -24.75 | -22.74 |
| 3400 | -3.96 | -2.49 | -3.29 | 0.74 | 1.04 | -24.42 | -22.19 | -22.74 | -25.00 | -22.70 |
| 3550 | -4.07 | -2.43 | -3.32 | 0.83 | 1.18 | -24.43 | -21.98 | -22.06 | -25.36 | -22.83 |
| 3700 | -4.16 | -2.39 | -3.36 | 0.89 | 1.35 | -24.45 | -21.63 | -21.48 | -26.57 | -23.59 |
| 3850 | -4.21 | -2.37 | -3.39 | 0.92 | 1.47 | -24.48 | -21.32 | -21.38 | -29.65 | -24.59 |
| 4000 | -4.22 | -2.37 | -3.39 | 0.93 | 1.52 | -24.67 | -22.19 | -21.91 | -33.28 | -26.65 |
| 4150 | -4.26 | -2.39 | -3.42 | 0.93 | 1.28 | -24.16 | -22.51 | -22.14 | -40.21 | -29.84 |
| 4300 | -4.20 | -2.45 | -3.41 | 0.87 | 1.18 | -24.47 | -22.05 | -22.02 | -36.61 | -32.71 |
| 4450 | -4.16 | -2.51 | -3.41 | 0.82 | 0.89 | -24.42 | -21.32 | -22.50 | -29.01 | -31.90 |
| 4600 | -4.10 | -2.55 | -3.39 | 0.77 | 0.76 | -23.83 | -21.06 | -22.39 | -27.28 | -27.25 |
| 4750 | -4.05 | -2.65 | -3.41 | 0.70 | 0.61 | -23.12 | -20.53 | -21.10 | -25.15 | -23.81 |
| 4900 | -3.93 | -2.74 | -3.38 | 0.60 | 0.28 | -22.38 | -20.42 | -20.44 | -23.14 | -21.26 |
| 5050 | -3.76 | -2.87 | -3.34 | 0.45 | 0.78 | -21.71 | -20.47 | -20.54 | -22.84 | -20.49 |
| 5200 | -3.67 | -2.98 | -3.34 | 0.35 | 0.95 | -21.47 | -20.54 | -20.17 | -21.61 | -19.61 |
| 5350 | -3.44 | -3.15 | -3.30 | 0.15 | 1.45 | -22.06 | -21.96 | -20.54 | -21.79 | -19.92 |
| 5500 | -3.27 | -3.39 | -3.33 | 0.05 | 1.44 | -21.94 | -23.03 | -19.76 | -22.06 | -19.95 |
| 5600 | -3.12 | -3.58 | -3.36 | 0.23 | 1.36 | -22.50 | -22.97 | -19.78 | -22.52 | -20.52 |
| 5700 | -2.97 | -3.71 | -3.36 | 0.37 | 1.66 | -22.53 | -22.94 | -19.52 | -21.73 | -21.07 |
| 5800 | -2.84 | -3.97 | -3.44 | 0.57 | 1.38 | -22.81 | -21.83 | -18.66 | -22.07 | -21.15 |
| 5900 | -2.72 | -4.09 | -3.46 | 0.69 | 1.48 | -22.79 | -21.44 | -18.48 | -24.14 | -21.63 |
| 6000 | -2.56 | -4.45 | -3.61 | 0.95 | 0.88 | -23.39 | -19.09 | -17.66 | -23.45 | -21.90 |
| 6100 | -2.38 | -4.64 | -3.66 | 1.14 | 1.44 | -22.61 | -18.84 | -17.57 | -23.57 | -22.92 |
| 6200 | -2.26 | -4.92 | -3.79 | 1.35 | 1.35 | -22.34 | -18.00 | -17.00 | -24.19 | -23.92 |
| 6300 | -2.13 | -5.29 | -3.99 | 1.58 | 0.85 | -22.83 | -16.70 | -15.96 | -24.00 | -23.46 |
| 6400 | -1.99 | -5.62 | -4.17 | 1.83 | 1.14 | -22.63 | -15.71 | -15.58 | -24.99 | -24.30 |
| 6500 | -1.81 | -5.98 | -4.38 | 2.09 | 1.49 | -22.75 | -15.16 | -15.29 | -25.33 | -24.66 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration C.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.24 | -6.41 | -4.55 | 2.58 | 0.19 | -40.57 | -33.79 | -32.84 | -33.20 | -30.34 |
| 1600 | -1.39 | -5.97 | -4.26 | 2.28 | 0.20 | -43.86 | -32.64 | -30.51 | -37.10 | -32.26 |
| 1700 | -1.54 | -5.58 | -4.01 | 2.01 | 0.24 | -45.29 | -32.93 | -29.51 | -49.05 | -35.44 |
| 1800 | -1.69 | -5.22 | -3.80 | 1.76 | 0.26 | -45.60 | -33.67 | -29.83 | -46.63 | -38.59 |
| 1900 | -1.85 | -4.89 | -3.63 | 1.52 | 0.29 | -43.06 | -32.42 | -29.71 | -38.88 | -39.60 |
| 2000 | -2.01 | -4.60 | -3.50 | 1.29 | 0.31 | -38.64 | -31.54 | -29.41 | -35.59 | -38.30 |
| 2100 | -2.17 | -4.33 | -3.38 | 1.08 | 0.31 | -36.60 | -31.85 | -29.73 | -33.15 | -37.94 |
| 2200 | -2.32 | -4.09 | -3.29 | 0.87 | 0.32 | -35.39 | -32.70 | -29.71 | -31.45 | -36.24 |
| 2300 | -2.48 | -3.86 | -3.22 | 0.69 | 0.37 | -33.89 | -32.94 | -28.64 | -29.94 | -34.43 |
| 2400 | -2.64 | -3.67 | -3.19 | 0.51 | 0.34 | -32.23 | -31.53 | -28.26 | -28.86 | -33.72 |
| 2500 | -2.80 | -3.48 | -3.15 | 0.34 | 0.35 | -31.29 | -30.34 | -28.19 | -28.80 | -32.47 |
| 2650 | -3.03 | -3.24 | -3.13 | 0.10 | 0.42 | -30.11 | -31.17 | -27.43 | -27.70 | -29.19 |
| 2800 | -3.25 | -3.03 | -3.14 | 0.12 | 0.43 | -29.22 | -30.14 | -26.47 | -25.37 | -26.43 |
| 2950 | -3.45 | -2.85 | -3.16 | 0.30 | 0.48 | -28.06 | -28.31 | -24.96 | -24.32 | -25.69 |
| 3100 | -3.65 | -2.71 | -3.21 | 0.48 | 0.55 | -27.30 | -25.78 | -23.57 | -23.17 | -24.92 |
| 3250 | -3.83 | -2.59 | -3.25 | 0.62 | 0.68 | -26.96 | -23.80 | -22.14 | -22.74 | -24.75 |
| 3400 | -3.96 | -2.50 | -3.29 | 0.74 | 0.90 | -26.76 | -22.74 | -22.19 | -22.70 | -25.00 |
| 3550 | -4.08 | -2.43 | -3.33 | 0.83 | 1.00 | -27.12 | -22.06 | -21.98 | -22.83 | -25.36 |
| 3700 | -4.16 | -2.40 | -3.37 | 0.89 | 1.14 | -26.64 | -21.48 | -21.63 | -23.59 | -26.57 |
| 3850 | -4.22 | -2.37 | -3.39 | 0.93 | 1.16 | -25.80 | -21.38 | -21.32 | -24.59 | -29.65 |
| 4000 | -4.22 | -2.37 | -3.39 | 0.94 | 1.21 | -25.37 | -21.91 | -22.19 | -26.65 | -33.28 |
| 4150 | -4.26 | -2.39 | -3.42 | 0.94 | 0.91 | -24.55 | -22.14 | -22.51 | -29.84 | -40.21 |
| 4300 | -4.20 | -2.43 | -3.40 | 0.89 | 0.87 | -25.19 | -22.02 | -22.05 | -32.71 | -36.61 |
| 4450 | -4.15 | -2.45 | -3.38 | 0.83 | 0.57 | -25.66 | -22.50 | -21.32 | -31.90 | -29.01 |
| 4600 | -4.09 | -2.49 | -3.36 | 0.80 | 0.61 | -24.98 | -22.39 | -21.06 | -27.25 | -27.28 |
| 4750 | -4.04 | -2.59 | -3.38 | 0.71 | 0.47 | -24.25 | -21.10 | -20.53 | -23.81 | -25.15 |
| 4900 | -3.93 | -2.72 | -3.37 | 0.61 | 0.18 | -23.25 | -20.44 | -20.42 | -21.26 | -23.14 |
| 5050 | -3.76 | -2.83 | -3.32 | 0.47 | 0.58 | -23.12 | -20.54 | -20.47 | -20.49 | -22.84 |
| 5200 | -3.67 | -2.95 | -3.32 | 0.37 | 0.68 | -22.64 | -20.17 | -20.54 | -19.61 | -21.61 |
| 5350 | -3.46 | -3.16 | -3.31 | 0.16 | 1.19 | -22.34 | -20.54 | -21.96 | -19.92 | -21.79 |
| 5500 | -3.27 | -3.40 | -3.34 | 0.05 | 0.95 | -21.64 | -19.76 | -23.03 | -19.95 | -22.06 |
| 5600 | -3.13 | -3.60 | -3.37 | 0.22 | 0.83 | -21.99 | -19.78 | -22.97 | -20.52 | -22.52 |
| 5700 | -2.98 | -3.73 | -3.37 | 0.36 | 1.14 | -21.06 | -19.52 | -22.94 | -21.07 | -21.73 |
| 5800 | -2.85 | -4.00 | -3.46 | 0.56 | 0.93 | -21.40 | -18.66 | -21.83 | -21.15 | -22.07 |
| 5900 | -2.73 | -4.12 | -3.48 | 0.69 | 0.75 | -21.71 | -18.48 | -21.44 | -21.63 | -24.14 |
| 6000 | -2.57 | -4.48 | -3.63 | 0.94 | 0.32 | -22.91 | -17.66 | -19.09 | -21.90 | -23.45 |
| 6100 | -2.38 | -4.63 | -3.65 | 1.11 | 0.78 | -22.47 | -17.57 | -18.84 | -22.92 | -23.57 |
| 6200 | -2.26 | -4.91 | -3.78 | 1.31 | 0.71 | -22.80 | -17.00 | -18.00 | -23.92 | -24.19 |
| 6300 | -2.14 | -5.30 | -4.00 | 1.58 | 0.15 | -23.73 | -15.96 | -16.70 | -23.46 | -24.00 |
| 6400 | -1.99 | -5.60 | -4.16 | 1.78 | 0.54 | -23.93 | -15.58 | -15.71 | -24.30 | -24.99 |
| 6500 | -1.81 | -5.95 | -4.36 | 2.04 | 0.80 | -23.67 | -15.29 | -15.16 | -24.66 | -25.33 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = -55°C, Configuration D.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.24 | -6.41 | -4.55 | 2.59 | 0.01 | -40.82 | -30.34 | -33.20 | -32.84 | -33.79 |
| 1600 | -1.39 | -5.97 | -4.26 | 2.30 | -0.02 | -44.75 | -32.26 | -37.10 | -30.51 | -32.64 |
| 1700 | -1.54 | -5.58 | -4.01 | 2.03 | -0.07 | -45.56 | -35.44 | -49.05 | -29.51 | -32.93 |
| 1800 | -1.69 | -5.22 | -3.80 | 1.78 | -0.10 | -45.05 | -38.59 | -46.63 | -29.83 | -33.67 |
| 1900 | -1.84 | -4.89 | -3.63 | 1.54 | -0.14 | -42.50 | -39.60 | -38.88 | -29.71 | -32.42 |
| 2000 | -2.00 | -4.60 | -3.49 | 1.31 | -0.20 | -38.79 | -38.30 | -35.59 | -29.41 | -31.54 |
| 2100 | -2.16 | -4.33 | -3.38 | 1.10 | -0.26 | -37.05 | -37.94 | -33.15 | -29.73 | -31.85 |
| 2200 | -2.32 | -4.08 | -3.29 | 0.89 | -0.31 | -36.05 | -36.24 | -31.45 | -29.71 | -32.70 |
| 2300 | -2.48 | -3.86 | -3.22 | 0.70 | -0.36 | -34.43 | -34.43 | -29.94 | -28.64 | -32.94 |
| 2400 | -2.63 | -3.66 | -3.18 | 0.52 | -0.38 | -32.70 | -33.72 | -28.86 | -28.26 | -31.53 |
| 2500 | -2.79 | -3.48 | -3.15 | 0.36 | -0.41 | -31.46 | -32.47 | -28.80 | -28.19 | -30.34 |
| 2650 | -3.02 | -3.24 | -3.13 | 0.12 | -0.59 | -30.11 | -29.19 | -27.70 | -27.43 | -31.17 |
| 2800 | -3.24 | -3.03 | -3.14 | 0.10 | -0.65 | -29.02 | -26.43 | -25.37 | -26.47 | -30.14 |
| 2950 | -3.44 | -2.85 | -3.16 | 0.29 | -0.70 | -28.05 | -25.69 | -24.32 | -24.96 | -28.31 |
| 3100 | -3.63 | -2.71 | -3.19 | 0.46 | -0.69 | -27.20 | -24.92 | -23.17 | -23.57 | -25.78 |
| 3250 | -3.80 | -2.59 | -3.23 | 0.61 | -0.59 | -26.69 | -24.75 | -22.74 | -22.14 | -23.80 |
| 3400 | -3.92 | -2.50 | -3.27 | 0.70 | -0.54 | -26.66 | -25.00 | -22.70 | -22.19 | -22.74 |
| 3550 | -4.02 | -2.43 | -3.30 | 0.81 | -0.52 | -26.80 | -25.36 | -22.83 | -21.98 | -22.06 |
| 3700 | -4.09 | -2.39 | -3.32 | 0.84 | -0.55 | -26.66 | -26.57 | -23.59 | -21.63 | -21.48 |
| 3850 | -4.12 | -2.37 | -3.33 | 0.89 | -0.55 | -26.17 | -29.65 | -24.59 | -21.32 | -21.38 |
| 4000 | -4.12 | -2.37 | -3.33 | 0.87 | -0.72 | -25.58 | -33.28 | -26.65 | -22.19 | -21.91 |
| 4150 | -4.14 | -2.40 | -3.35 | 0.89 | -1.16 | -24.93 | -40.21 | -29.84 | -22.51 | -22.14 |
| 4300 | -4.08 | -2.46 | -3.35 | 0.81 | -1.38 | -25.11 | -36.61 | -32.71 | -22.05 | -22.02 |
| 4450 | -4.02 | -2.51 | -3.33 | 0.79 | -1.95 | -25.14 | -29.01 | -31.90 | -21.32 | -22.50 |
| 4600 | -3.96 | -2.55 | -3.31 | 0.71 | -2.04 | -24.78 | -27.28 | -27.25 | -21.06 | -22.39 |
| 4750 | -3.88 | -2.65 | -3.31 | 0.65 | -2.48 | -23.90 | -25.15 | -23.81 | -20.53 | -21.10 |
| 4900 | -3.83 | -2.74 | -3.32 | 0.55 | -2.90 | -23.41 | -23.14 | -21.26 | -20.42 | -20.44 |
| 5050 | -3.67 | -2.86 | -3.29 | 0.43 | -2.31 | -23.41 | -22.84 | -20.49 | -20.47 | -20.54 |
| 5200 | -3.58 | -2.98 | -3.29 | 0.30 | -2.14 | -22.65 | -21.61 | -19.61 | -20.54 | -20.17 |
| 5350 | -3.40 | -3.16 | -3.28 | 0.13 | -1.79 | -22.55 | -21.79 | -19.92 | -21.96 | -20.54 |
| 5500 | -3.23 | -3.39 | -3.31 | 0.06 | -1.34 | -21.51 | -22.06 | -19.95 | -23.03 | -19.76 |
| 5600 | -3.01 | -3.59 | -3.31 | 0.31 | -1.36 | -21.86 | -22.52 | -20.52 | -22.97 | -19.78 |
| 5700 | -2.91 | -3.72 | -3.33 | 0.42 | -1.18 | -20.96 | -21.73 | -21.07 | -22.94 | -19.52 |
| 5800 | -2.72 | -3.98 | -3.40 | 0.66 | -1.46 | -21.36 | -22.07 | -21.15 | -21.83 | -18.66 |
| 5900 | -2.62 | -4.10 | -3.42 | 0.69 | -0.96 | -21.73 | -24.14 | -21.63 | -21.44 | -18.48 |
| 6000 | -2.44 | -4.48 | -3.58 | 1.04 | -1.77 | -22.86 | -23.45 | -21.90 | -19.09 | -17.66 |
| 6100 | -2.25 | -4.66 | -3.62 | 1.22 | -1.19 | -22.28 | -23.57 | -22.92 | -18.84 | -17.57 |
| 6200 | -2.07 | -4.95 | -3.74 | 1.46 | -1.01 | -22.53 | -24.19 | -23.92 | -18.00 | -17.00 |
| 6300 | -1.94 | -5.31 | -3.94 | 1.59 | -1.55 | -23.46 | -24.00 | -23.46 | -16.70 | -15.96 |
| 6400 | -1.77 | -5.63 | -4.12 | 1.96 | -1.55 | -23.71 | -24.99 | -24.30 | -15.71 | -15.58 |
| 6500 | -1.60 | -5.99 | -4.33 | 2.23 | -1.45 | -23.61 | -25.33 | -24.66 | -15.16 | -15.29 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration A.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.23 | -6.41 | -4.55 | 2.59 | 0.26 | -38.47 | -29.73 | -28.46 | -39.33 | -38.17 |
| 1600 | -1.38 | -5.98 | -4.26 | 2.30 | 0.24 | -39.79 | -30.95 | -28.96 | -40.43 | -36.73 |
| 1700 | -1.52 | -5.58 | -4.01 | 2.03 | 0.23 | -40.65 | -32.61 | -29.91 | -41.85 | -36.03 |
| 1800 | -1.68 | -5.22 | -3.80 | 1.78 | 0.20 | -40.62 | -34.42 | -31.05 | -43.44 | -35.46 |
| 1900 | -1.82 | -4.89 | -3.62 | 1.54 | 0.21 | -40.41 | -35.68 | -32.47 | -45.83 | -34.89 |
| 2000 | -1.98 | -4.60 | -3.48 | 1.31 | 0.18 | -39.16 | -37.27 | -34.63 | -48.12 | -34.54 |
| 2100 | -2.14 | -4.33 | -3.37 | 1.10 | 0.11 | -38.19 | -38.23 | -37.30 | -47.35 | -34.43 |
| 2200 | -2.29 | -4.08 | -3.28 | 0.89 | 0.10 | -37.66 | -37.81 | -38.97 | -47.08 | -33.88 |
| 2300 | -2.44 | -3.85 | -3.20 | 0.71 | 0.13 | -36.93 | -38.42 | -40.31 | -48.24 | -33.58 |
| 2400 | -2.60 | -3.65 | -3.16 | 0.53 | 0.05 | -35.74 | -37.32 | -40.77 | -45.89 | -33.85 |
| 2500 | -2.75 | -3.47 | -3.12 | 0.36 | -0.03 | -35.05 | -35.60 | -39.27 | -43.82 | -33.12 |
| 2650 | -2.97 | -3.22 | -3.10 | 0.12 | -0.06 | -33.71 | -33.37 | -36.20 | -44.67 | -31.90 |
| 2800 | -3.18 | -3.02 | -3.10 | 0.08 | -0.12 | -33.29 | -31.85 | -32.15 | -37.77 | -30.90 |
| 2950 | -3.37 | -2.83 | -3.11 | 0.27 | -0.23 | -32.91 | -31.31 | -31.53 | -35.66 | -31.24 |
| 3100 | -3.54 | -2.68 | -3.13 | 0.43 | -0.27 | -32.91 | -30.46 | -30.71 | -34.06 | -31.29 |
| 3250 | -3.71 | -2.56 | -3.17 | 0.57 | -0.37 | -32.61 | -30.96 | -30.21 | -32.58 | -29.67 |
| 3400 | -3.83 | -2.46 | -3.20 | 0.69 | -0.45 | -34.13 | -30.87 | -28.53 | -30.98 | -29.21 |
| 3550 | -3.94 | -2.39 | -3.23 | 0.78 | -0.53 | -34.92 | -28.26 | -27.48 | -29.48 | -28.62 |
| 3700 | -4.03 | -2.35 | -3.27 | 0.85 | -0.71 | -34.78 | -28.57 | -27.80 | -28.52 | -27.51 |
| 3850 | -4.08 | -2.31 | -3.28 | 0.90 | -0.73 | -33.97 | -29.72 | -27.65 | -28.31 | -28.19 |
| 4000 | -4.10 | -2.31 | -3.30 | 0.92 | -0.87 | -34.45 | -29.47 | -28.66 | -27.37 | -29.19 |
| 4150 | -4.12 | -2.34 | -3.32 | 0.92 | -0.94 | -37.44 | -32.82 | -31.68 | -27.26 | -29.27 |
| 4300 | -4.12 | -2.37 | -3.33 | 0.90 | -1.08 | -36.50 | -30.48 | -30.47 | -27.64 | -28.10 |
| 4450 | -4.07 | -2.43 | -3.33 | 0.84 | -0.95 | -37.46 | -32.65 | -31.31 | -26.58 | -26.69 |
| 4600 | -4.01 | -2.50 | -3.32 | 0.76 | -1.07 | -35.26 | -36.09 | -32.82 | -26.94 | -28.94 |
| 4750 | -3.94 | -2.58 | -3.31 | 0.67 | -1.26 | -34.27 | -50.69 | -36.38 | -27.81 | -30.57 |
| 4900 | -3.84 | -2.67 | -3.29 | 0.57 | -1.60 | -32.81 | -36.41 | -44.06 | -27.87 | -27.73 |
| 5050 | -3.67 | -2.78 | -3.25 | 0.42 | -1.38 | -32.61 | -32.94 | -40.03 | -27.26 | -27.21 |
| 5200 | -3.52 | -2.93 | -3.24 | 0.28 | -1.66 | -31.10 | -27.77 | -34.17 | -26.60 | -28.03 |
| 5350 | -3.34 | -3.09 | -3.22 | 0.11 | -1.67 | -30.48 | -27.99 | -32.68 | -26.94 | -29.09 |
| 5500 | -3.15 | -3.29 | -3.22 | 0.08 | -1.51 | -27.51 | -27.20 | -32.97 | -25.89 | -26.93 |
| 5600 | -2.98 | -3.46 | -3.23 | 0.24 | -1.44 | -27.00 | -26.43 | -33.64 | -26.09 | -26.75 |
| 5700 | -2.85 | -3.62 | -3.25 | 0.39 | -1.60 | -26.13 | -25.39 | -30.40 | -25.54 | -26.40 |
| 5800 | -2.70 | -3.78 | -3.27 | 0.54 | -1.52 | -25.03 | -25.04 | -27.36 | -25.79 | -26.04 |
| 5900 | -2.54 | -3.96 | -3.31 | 0.70 | -1.28 | -24.24 | -24.95 | -26.03 | -25.73 | -25.18 |
| 6000 | -2.37 | -4.20 | -3.38 | 0.91 | -1.19 | -24.51 | -25.01 | -25.24 | -25.08 | -24.22 |
| 6100 | -2.23 | -4.45 | -3.48 | 1.10 | -1.29 | -24.59 | -24.63 | -24.58 | -23.50 | -23.25 |
| 6200 | -2.06 | -4.71 | -3.58 | 1.32 | -0.79 | -24.33 | -25.37 | -24.71 | -22.70 | -22.77 |
| 6300 | -1.90 | -5.00 | -3.72 | 1.54 | -0.54 | -24.07 | -25.18 | -24.52 | -21.61 | -22.48 |
| 6400 | -1.75 | -5.32 | -3.89 | 1.78 | -0.35 | -23.81 | -25.44 | -24.09 | -20.78 | -21.68 |
| 6500 | -1.58 | -5.72 | -4.13 | 2.06 | -0.09 | -23.40 | -25.51 | -23.77 | -19.57 | -19.82 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration B.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.22 | -6.43 | -4.56 | 2.60 | 0.05 | -38.80 | -38.17 | -39.33 | -28.46 | -29.73 |
| 1600 | -1.37 | -6.00 | -4.27 | 2.31 | 0.06 | -39.85 | -36.73 | -40.43 | -28.96 | -30.95 |
| 1700 | -1.52 | -5.60 | -4.02 | 2.04 | 0.05 | -40.36 | -36.03 | -41.85 | -29.91 | -32.61 |
| 1800 | -1.67 | -5.24 | -3.81 | 1.79 | 0.05 | -40.06 | -35.46 | -43.44 | -31.05 | -34.42 |
| 1900 | -1.82 | -4.91 | -3.63 | 1.55 | 0.03 | -39.61 | -34.89 | -45.83 | -32.47 | -35.68 |
| 2000 | -1.98 | -4.61 | -3.49 | 1.32 | 0.05 | -38.43 | -34.54 | -48.12 | -34.63 | -37.27 |
| 2100 | -2.14 | -4.34 | -3.38 | 1.10 | 0.09 | -37.16 | -34.43 | -47.35 | -37.30 | -38.23 |
| 2200 | -2.30 | -4.09 | -3.29 | 0.90 | 0.10 | -36.51 | -33.88 | -47.08 | -38.97 | -37.81 |
| 2300 | -2.45 | -3.87 | -3.22 | 0.71 | 0.06 | -35.83 | -33.58 | -48.24 | -40.31 | -38.42 |
| 2400 | -2.61 | -3.66 | -3.17 | 0.53 | 0.14 | -34.72 | -33.85 | -45.89 | -40.77 | -37.32 |
| 2500 | -2.76 | -3.48 | -3.13 | 0.36 | 0.24 | -34.22 | -33.12 | -43.82 | -39.27 | -35.60 |
| 2650 | -2.99 | -3.24 | -3.11 | 0.13 | 0.21 | -33.57 | -31.90 | -44.67 | -36.20 | -33.37 |
| 2800 | -3.19 | -3.03 | -3.11 | 0.09 | 0.26 | -33.76 | -30.90 | -37.77 | -32.15 | -31.85 |
| 2950 | -3.39 | -2.85 | -3.13 | 0.27 | 0.32 | -33.54 | -31.24 | -35.66 | -31.53 | -31.31 |
| 3100 | -3.57 | -2.70 | -3.16 | 0.44 | 0.36 | -33.91 | -31.29 | -34.06 | -30.71 | -30.46 |
| 3250 | -3.73 | -2.58 | -3.19 | 0.57 | 0.41 | -33.11 | -29.67 | -32.58 | -30.21 | -30.96 |
| 3400 | -3.86 | -2.48 | -3.22 | 0.69 | 0.49 | -33.87 | -29.21 | -30.98 | -28.53 | -30.87 |
| 3550 | -3.98 | -2.41 | -3.26 | 0.78 | 0.56 | -34.36 | -28.62 | -29.48 | -27.48 | -28.26 |
| 3700 | -4.07 | -2.36 | -3.30 | 0.85 | 0.58 | -34.02 | -27.51 | -28.52 | -27.80 | -28.57 |
| 3850 | -4.13 | -2.33 | -3.32 | 0.89 | 0.69 | -33.57 | -28.19 | -28.31 | -27.65 | -29.72 |
| 4000 | -4.18 | -2.33 | -3.35 | 0.90 | 0.65 | -34.82 | -29.19 | -27.37 | -28.66 | -29.47 |
| 4150 | -4.19 | -2.34 | -3.36 | 0.91 | 0.59 | -38.21 | -29.27 | -27.26 | -31.68 | -32.82 |
| 4300 | -4.18 | -2.38 | -3.37 | 0.88 | 0.40 | -36.76 | -28.10 | -27.64 | -30.47 | -30.48 |
| 4450 | -4.11 | -2.44 | -3.35 | 0.83 | 0.45 | -38.10 | -26.69 | -26.58 | -31.31 | -32.65 |
| 4600 | -4.03 | -2.52 | -3.34 | 0.75 | 0.38 | -35.43 | -28.94 | -26.94 | -32.82 | -36.09 |
| 4750 | -3.92 | -2.61 | -3.31 | 0.67 | 0.35 | -33.91 | -30.57 | -27.81 | -36.38 | -50.69 |
| 4900 | -3.79 | -2.73 | -3.29 | 0.55 | 0.15 | -32.58 | -27.73 | -27.87 | -44.06 | -36.41 |
| 5050 | -3.61 | -2.86 | -3.25 | 0.41 | 0.27 | -31.80 | -27.21 | -27.26 | -40.03 | -32.94 |
| 5200 | -3.47 | -3.02 | -3.25 | 0.25 | 0.01 | -30.56 | -28.03 | -26.60 | -34.17 | -27.77 |
| 5350 | -3.29 | -3.19 | -3.24 | 0.09 | -0.19 | -30.70 | -29.09 | -26.94 | -32.68 | -27.99 |
| 5500 | -3.13 | -3.38 | -3.26 | 0.08 | -0.46 | -27.98 | -26.93 | -25.89 | -32.97 | -27.20 |
| 5600 | -3.00 | -3.54 | -3.28 | 0.27 | -0.68 | -27.93 | -26.75 | -26.09 | -33.64 | -26.43 |
| 5700 | -2.89 | -3.69 | -3.31 | 0.40 | -0.79 | -26.99 | -26.40 | -25.54 | -30.40 | -25.39 |
| 5800 | -2.75 | -3.84 | -3.33 | 0.56 | -0.82 | -25.49 | -26.04 | -25.79 | -27.36 | -25.04 |
| 5900 | -2.59 | -4.02 | -3.36 | 0.71 | -0.77 | -24.35 | -25.18 | -25.73 | -26.03 | -24.95 |
| 6000 | -2.45 | -4.25 | -3.44 | 0.92 | -0.83 | -24.22 | -24.22 | -25.08 | -25.24 | -25.01 |
| 6100 | -2.33 | -4.51 | -3.56 | 1.10 | -1.07 | -23.93 | -23.25 | -23.50 | -24.58 | -24.63 |
| 6200 | -2.16 | -4.77 | -3.66 | 1.32 | -0.79 | -23.53 | -22.77 | -22.70 | -24.71 | -25.37 |
| 6300 | -2.01 | -5.05 | -3.79 | 1.54 | -0.76 | -23.40 | -22.48 | -21.61 | -24.52 | -25.18 |
| 6400 | -1.87 | -5.37 | -3.96 | 1.76 | -0.60 | -23.10 | -21.68 | -20.78 | -24.09 | -25.44 |
| 6500 | -1.73 | -5.77 | -4.20 | 2.03 | -0.61 | -22.88 | -19.82 | -19.57 | -23.77 | -25.51 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration C.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.23 | -6.46 | -4.59 | 2.60 | -0.40 | -35.16 | -39.33 | -38.17 | -29.73 | -28.46 |
| 1600 | -1.37 | -6.03 | -4.30 | 2.31 | -0.46 | -35.72 | -40.43 | -36.73 | -30.95 | -28.96 |
| 1700 | -1.52 | -5.63 | -4.04 | 2.03 | -0.46 | -36.47 | -41.85 | -36.03 | -32.61 | -29.91 |
| 1800 | -1.67 | -5.27 | -3.83 | 1.78 | -0.50 | -37.46 | -43.44 | -35.46 | -34.42 | -31.05 |
| 1900 | -1.83 | -4.94 | -3.66 | 1.54 | -0.51 | -39.02 | -45.83 | -34.89 | -35.68 | -32.47 |
| 2000 | -1.99 | -4.65 | -3.52 | 1.31 | -0.54 | -41.17 | -48.12 | -34.54 | -37.27 | -34.63 |
| 2100 | -2.15 | -4.38 | -3.41 | 1.10 | -0.59 | -44.05 | -47.35 | -34.43 | -38.23 | -37.30 |
| 2200 | -2.30 | -4.13 | -3.31 | 0.89 | -0.59 | -47.83 | -47.08 | -33.88 | -37.81 | -38.97 |
| 2300 | -2.46 | -3.91 | -3.25 | 0.70 | -0.57 | -48.50 | -48.24 | -33.58 | -38.42 | -40.31 |
| 2400 | -2.62 | -3.72 | -3.20 | 0.53 | -0.61 | -45.21 | -45.89 | -33.85 | -37.32 | -40.77 |
| 2500 | -2.77 | -3.53 | -3.17 | 0.35 | -0.64 | -43.78 | -43.82 | -33.12 | -35.60 | -39.27 |
| 2650 | -2.99 | -3.28 | -3.14 | 0.12 | -0.61 | -41.11 | -44.67 | -31.90 | -33.37 | -36.20 |
| 2800 | -3.21 | -3.08 | -3.15 | 0.09 | -0.66 | -38.94 | -37.77 | -30.90 | -31.85 | -32.15 |
| 2950 | -3.39 | -2.89 | -3.15 | 0.28 | -0.69 | -35.43 | -35.66 | -31.24 | -31.31 | -31.53 |
| 3100 | -3.58 | -2.74 | -3.18 | 0.45 | -0.65 | -34.18 | -34.06 | -31.29 | -30.46 | -30.71 |
| 3250 | -3.74 | -2.63 | -3.22 | 0.58 | -0.70 | -33.70 | -32.58 | -29.67 | -30.96 | -30.21 |
| 3400 | -3.87 | -2.52 | -3.25 | 0.70 | -0.67 | -33.31 | -30.98 | -29.21 | -30.87 | -28.53 |
| 3550 | -3.99 | -2.45 | -3.29 | 0.79 | -0.66 | -33.32 | -29.48 | -28.62 | -28.26 | -27.48 |
| 3700 | -4.08 | -2.41 | -3.32 | 0.86 | -0.74 | -32.58 | -28.52 | -27.51 | -28.57 | -27.80 |
| 3850 | -4.14 | -2.36 | -3.34 | 0.90 | -0.73 | -30.83 | -28.31 | -28.19 | -29.72 | -27.65 |
| 4000 | -4.17 | -2.36 | -3.36 | 0.94 | -0.73 | -30.64 | -27.37 | -29.19 | -29.47 | -28.66 |
| 4150 | -4.17 | -2.37 | -3.36 | 0.92 | -0.78 | -30.79 | -27.26 | -29.27 | -32.82 | -31.68 |
| 4300 | -4.16 | -2.39 | -3.36 | 0.90 | -0.93 | -31.68 | -27.64 | -28.10 | -30.48 | -30.47 |
| 4450 | -4.08 | -2.42 | -3.33 | 0.84 | -0.86 | -33.22 | -26.58 | -26.69 | -32.65 | -31.31 |
| 4600 | -4.00 | -2.50 | -3.31 | 0.76 | -1.05 | -31.27 | -26.94 | -28.94 | -36.09 | -32.82 |
| 4750 | -3.92 | -2.59 | -3.30 | 0.67 | -1.17 | -31.42 | -27.81 | -30.57 | -50.69 | -36.38 |
| 4900 | -3.81 | -2.71 | -3.29 | 0.56 | -1.62 | -31.13 | -27.87 | -27.73 | -36.41 | -44.06 |
| 5050 | -3.65 | -2.85 | -3.27 | 0.42 | -1.66 | -31.73 | -27.26 | -27.21 | -32.94 | -40.03 |
| 5200 | -3.51 | -3.03 | -3.28 | 0.28 | -2.02 | -31.43 | -26.60 | -28.03 | -27.77 | -34.17 |
| 5350 | -3.33 | -3.21 | -3.27 | 0.11 | -2.19 | -28.91 | -26.94 | -29.09 | -27.99 | -32.68 |
| 5500 | -3.16 | -3.42 | -3.29 | 0.08 | -2.38 | -27.42 | -25.89 | -26.93 | -27.20 | -32.97 |
| 5600 | -3.02 | -3.60 | -3.32 | 0.23 | -2.48 | -27.55 | -26.09 | -26.75 | -26.43 | -33.64 |
| 5700 | -2.91 | -3.77 | -3.36 | 0.37 | -2.59 | -26.58 | -25.54 | -26.40 | -25.39 | -30.40 |
| 5800 | -2.76 | -3.95 | -3.40 | 0.52 | -2.69 | -25.73 | -25.79 | -26.04 | -25.04 | -27.36 |
| 5900 | -2.61 | -4.13 | -3.44 | 0.70 | -2.60 | -25.04 | -25.73 | -25.18 | -24.95 | -26.03 |
| 6000 | -2.46 | -4.38 | -3.53 | 0.88 | -2.77 | -24.89 | -25.08 | -24.22 | -25.01 | -25.24 |
| 6100 | -2.34 | -4.64 | -3.64 | 1.06 | -3.07 | -24.42 | -23.50 | -23.25 | -24.63 | -24.58 |
| 6200 | -2.17 | -4.90 | -3.75 | 1.28 | -2.79 | -23.84 | -22.70 | -22.77 | -25.37 | -24.71 |
| 6300 | -2.02 | -5.19 | -3.89 | 1.54 | -2.74 | -23.24 | -21.61 | -22.48 | -25.18 | -24.52 |
| 6400 | -1.88 | -5.52 | -4.07 | 1.73 | -2.61 | -22.73 | -20.78 | -21.68 | -25.44 | -24.09 |
| 6500 | -1.73 | -5.92 | -4.31 | 2.00 | -2.59 | -22.45 | -19.57 | -19.82 | -25.51 | -23.77 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +25°C, Configuration D.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.28 | -6.43 | -4.58 | 2.60 | 0.71 | -35.33 | -28.46 | -29.73 | -38.17 | -39.33 |
| 1600 | -1.42 | -6.00 | -4.29 | 2.31 | 0.75 | -36.20 | -28.96 | -30.95 | -36.73 | -40.43 |
| 1700 | -1.58 | -5.60 | -4.04 | 2.04 | 0.75 | -37.01 | -29.91 | -32.61 | -36.03 | -41.85 |
| 1800 | -1.73 | -5.24 | -3.83 | 1.78 | 0.75 | -38.32 | -31.05 | -34.42 | -35.46 | -43.44 |
| 1900 | -1.88 | -4.92 | -3.66 | 1.55 | 0.76 | -39.84 | -32.47 | -35.68 | -34.89 | -45.83 |
| 2000 | -2.03 | -4.62 | -3.52 | 1.32 | 0.76 | -41.90 | -34.63 | -37.27 | -34.54 | -48.12 |
| 2100 | -2.19 | -4.35 | -3.40 | 1.10 | 0.78 | -45.03 | -37.30 | -38.23 | -34.43 | -47.35 |
| 2200 | -2.35 | -4.10 | -3.31 | 0.90 | 0.80 | -49.20 | -38.97 | -37.81 | -33.88 | -47.08 |
| 2300 | -2.51 | -3.88 | -3.25 | 0.71 | 0.76 | -52.15 | -40.31 | -38.42 | -33.58 | -48.24 |
| 2400 | -2.66 | -3.67 | -3.19 | 0.53 | 0.79 | -47.59 | -40.77 | -37.32 | -33.85 | -45.89 |
| 2500 | -2.81 | -3.49 | -3.16 | 0.37 | 0.84 | -44.65 | -39.27 | -35.60 | -33.12 | -43.82 |
| 2650 | -3.03 | -3.25 | -3.14 | 0.13 | 0.76 | -40.94 | -36.20 | -33.37 | -31.90 | -44.67 |
| 2800 | -3.24 | -3.04 | -3.14 | 0.08 | 0.77 | -38.37 | -32.15 | -31.85 | -30.90 | -37.77 |
| 2950 | -3.43 | -2.86 | -3.15 | 0.27 | 0.79 | -35.44 | -31.53 | -31.31 | -31.24 | -35.66 |
| 3100 | -3.61 | -2.71 | -3.18 | 0.42 | 0.75 | -33.95 | -30.71 | -30.46 | -31.29 | -34.06 |
| 3250 | -3.77 | -2.59 | -3.22 | 0.57 | 0.74 | -33.12 | -30.21 | -30.96 | -29.67 | -32.58 |
| 3400 | -3.90 | -2.50 | -3.26 | 0.68 | 0.74 | -33.09 | -28.53 | -30.87 | -29.21 | -30.98 |
| 3550 | -4.01 | -2.43 | -3.29 | 0.77 | 0.69 | -32.68 | -27.48 | -28.26 | -28.62 | -29.48 |
| 3700 | -4.10 | -2.39 | -3.33 | 0.84 | 0.66 | -32.43 | -27.80 | -28.57 | -27.51 | -28.52 |
| 3850 | -4.16 | -2.36 | -3.35 | 0.89 | 0.69 | -31.39 | -27.65 | -29.72 | -28.19 | -28.31 |
| 4000 | -4.19 | -2.37 | -3.37 | 0.89 | 0.52 | -31.03 | -28.66 | -29.47 | -29.19 | -27.37 |
| 4150 | -4.21 | -2.38 | -3.39 | 0.91 | 0.44 | -31.66 | -31.68 | -32.82 | -29.27 | -27.26 |
| 4300 | -4.19 | -2.41 | -3.39 | 0.87 | 0.26 | -32.14 | -30.47 | -30.48 | -28.10 | -27.64 |
| 4450 | -4.11 | -2.45 | -3.36 | 0.83 | 0.34 | -32.44 | -31.31 | -32.65 | -26.69 | -26.58 |
| 4600 | -4.02 | -2.51 | -3.33 | 0.75 | 0.34 | -30.97 | -32.82 | -36.09 | -28.94 | -26.94 |
| 4750 | -3.93 | -2.59 | -3.31 | 0.67 | 0.28 | -30.49 | -36.38 | -50.69 | -30.57 | -27.81 |
| 4900 | -3.84 | -2.71 | -3.31 | 0.56 | 0.14 | -31.21 | -44.06 | -36.41 | -27.73 | -27.87 |
| 5050 | -3.69 | -2.85 | -3.29 | 0.41 | 0.54 | -32.58 | -40.03 | -32.94 | -27.21 | -27.26 |
| 5200 | -3.58 | -3.02 | -3.31 | 0.25 | 0.32 | -31.42 | -34.17 | -27.77 | -28.03 | -26.60 |
| 5350 | -3.44 | -3.20 | -3.32 | 0.10 | 0.38 | -29.41 | -32.68 | -27.99 | -29.09 | -26.94 |
| 5500 | -3.27 | -3.40 | -3.34 | 0.08 | 0.33 | -27.18 | -32.97 | -27.20 | -26.93 | -25.89 |
| 5600 | -3.12 | -3.56 | -3.35 | 0.28 | 0.34 | -27.37 | -33.64 | -26.43 | -26.75 | -26.09 |
| 5700 | -3.01 | -3.71 | -3.37 | 0.42 | 0.24 | -26.45 | -30.40 | -25.39 | -26.40 | -25.54 |
| 5800 | -2.87 | -3.87 | -3.40 | 0.58 | 0.44 | -25.68 | -27.36 | -25.04 | -26.04 | -25.79 |
| 5900 | -2.73 | -4.06 | -3.45 | 0.71 | 0.65 | -25.03 | -26.03 | -24.95 | -25.18 | -25.73 |
| 6000 | -2.57 | -4.29 | -3.51 | 0.94 | 0.76 | -24.70 | -25.24 | -25.01 | -24.22 | -25.08 |
| 6100 | -2.43 | -4.55 | -3.62 | 1.14 | 0.64 | -24.06 | -24.58 | -24.63 | -23.25 | -23.50 |
| 6200 | -2.26 | -4.80 | -3.71 | 1.36 | 1.09 | -23.43 | -24.71 | -25.37 | -22.77 | -22.70 |
| 6300 | -2.11 | -5.08 | -3.84 | 1.54 | 1.38 | -22.91 | -24.52 | -25.18 | -22.48 | -21.61 |
| 6400 | -1.96 | -5.40 | -4.01 | 1.81 | 1.62 | -22.51 | -24.09 | -25.44 | -21.68 | -20.78 |
| 6500 | -1.79 | -5.79 | -4.24 | 2.10 | 1.83 | -22.35 | -23.77 | -25.51 | -19.82 | -19.57 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration A.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.26 | -6.42 | -4.57 | 2.58 | -0.27 | -40.90 | -35.82 | -32.00 | -31.03 | -30.53 |
| 1600 | -1.41 | -5.98 | -4.27 | 2.29 | -0.33 | -39.65 | -38.61 | -32.33 | -30.86 | -30.10 |
| 1700 | -1.55 | -5.59 | -4.02 | 2.02 | -0.40 | -37.35 | -43.14 | -32.78 | -30.98 | -29.50 |
| 1800 | -1.71 | -5.23 | -3.82 | 1.77 | -0.46 | -35.55 | -46.55 | -33.19 | -31.40 | -29.23 |
| 1900 | -1.86 | -4.90 | -3.64 | 1.52 | -0.49 | -34.38 | -41.78 | -33.06 | -31.81 | -29.30 |
| 2000 | -2.01 | -4.61 | -3.50 | 1.30 | -0.54 | -32.74 | -38.29 | -33.03 | -32.66 | -29.08 |
| 2100 | -2.18 | -4.34 | -3.39 | 1.08 | -0.66 | -31.73 | -34.72 | -33.37 | -33.89 | -29.54 |
| 2200 | -2.33 | -4.09 | -3.30 | 0.88 | -0.71 | -31.32 | -32.65 | -33.30 | -33.74 | -29.76 |
| 2300 | -2.49 | -3.87 | -3.23 | 0.69 | -0.70 | -30.77 | -31.68 | -32.68 | -33.52 | -29.42 |
| 2400 | -2.65 | -3.67 | -3.19 | 0.52 | -0.78 | -30.17 | -30.71 | -32.44 | -33.43 | -29.23 |
| 2500 | -2.80 | -3.48 | -3.15 | 0.35 | -0.88 | -29.71 | -29.65 | -32.50 | -32.49 | -29.03 |
| 2650 | -3.02 | -3.24 | -3.13 | 0.11 | -0.92 | -28.98 | -30.95 | -34.02 | -38.00 | -29.82 |
| 2800 | -3.24 | -3.04 | -3.14 | 0.10 | -1.00 | -28.81 | -27.96 | -31.41 | -28.63 | -27.18 |
| 2950 | -3.43 | -2.86 | -3.15 | 0.28 | -1.12 | -29.37 | -29.40 | -31.82 | -31.39 | -29.13 |
| 3100 | -3.60 | -2.72 | -3.18 | 0.44 | -1.22 | -30.07 | -28.05 | -32.79 | -26.29 | -27.52 |
| 3250 | -3.76 | -2.61 | -3.22 | 0.57 | -1.31 | -29.96 | -29.56 | -32.54 | -29.09 | -28.13 |
| 3400 | -3.88 | -2.51 | -3.25 | 0.69 | -1.54 | -30.83 | -28.42 | -34.26 | -24.42 | -25.31 |
| 3550 | -3.98 | -2.43 | -3.27 | 0.78 | -1.75 | -32.30 | -28.13 | -30.32 | -26.92 | -26.42 |
| 3700 | -4.07 | -2.40 | -3.31 | 0.84 | -1.96 | -32.25 | -29.27 | -33.47 | -24.45 | -23.81 |
| 3850 | -4.13 | -2.37 | -3.34 | 0.89 | -2.20 | -30.87 | -31.06 | -29.53 | -26.33 | -26.17 |
| 4000 | -4.16 | -2.36 | -3.35 | 0.92 | -2.39 | -31.17 | -33.65 | -30.26 | -24.34 | -24.46 |
| 4150 | -4.20 | -2.39 | -3.39 | 0.93 | -2.59 | -34.30 | -34.07 | -31.36 | -26.22 | -26.69 |
| 4300 | -4.20 | -2.44 | -3.41 | 0.90 | -2.66 | -35.57 | -31.28 | -28.82 | -25.20 | -23.41 |
| 4450 | -4.15 | -2.48 | -3.39 | 0.85 | -2.59 | -32.06 | -31.82 | -29.07 | -25.61 | -24.71 |
| 4600 | -4.09 | -2.53 | -3.38 | 0.78 | -2.47 | -30.96 | -29.33 | -25.57 | -25.81 | -23.73 |
| 4750 | -3.99 | -2.62 | -3.36 | 0.67 | -2.57 | -30.29 | -39.35 | -32.17 | -26.83 | -27.68 |
| 4900 | -3.88 | -2.71 | -3.33 | 0.56 | -2.76 | -29.58 | -24.87 | -27.99 | -25.64 | -26.34 |
| 5050 | -3.68 | -2.85 | -3.28 | 0.39 | -2.65 | -28.98 | -28.77 | -34.30 | -26.65 | -27.35 |
| 5200 | -3.57 | -2.95 | -3.27 | 0.28 | -3.11 | -27.61 | -23.02 | -28.45 | -24.45 | -26.71 |
| 5350 | -3.34 | -3.15 | -3.25 | 0.08 | -2.91 | -26.65 | -25.56 | -30.55 | -25.95 | -27.47 |
| 5500 | -3.17 | -3.40 | -3.29 | 0.13 | -3.16 | -24.97 | -27.20 | -32.97 | -25.89 | -26.93 |
| 5600 | -2.98 | -3.60 | -3.30 | 0.32 | -3.58 | -24.85 | -23.03 | -30.98 | -23.58 | -23.14 |
| 5700 | -2.85 | -3.69 | -3.29 | 0.42 | -3.11 | -23.66 | -23.09 | -32.94 | -23.61 | -21.94 |
| 5800 | -2.68 | -3.93 | -3.35 | 0.63 | -3.27 | -23.84 | -23.70 | -32.28 | -22.16 | -19.96 |
| 5900 | -2.56 | -4.08 | -3.39 | 0.76 | -3.43 | -23.25 | -24.95 | -26.03 | -25.73 | -25.18 |
| 6000 | -2.34 | -4.44 | -3.52 | 1.05 | -3.53 | -23.73 | -23.20 | -28.02 | -20.33 | -18.14 |
| 6100 | -2.22 | -4.60 | -3.57 | 1.19 | -3.37 | -23.57 | -23.28 | -28.07 | -20.08 | -18.25 |
| 6200 | -2.05 | -4.84 | -3.67 | 1.40 | -2.95 | -23.49 | -24.55 | -28.98 | -19.47 | -17.88 |
| 6300 | -1.94 | -5.18 | -3.86 | 1.63 | -3.28 | -24.31 | -25.18 | -24.52 | -21.61 | -22.48 |
| 6400 | -1.76 | -5.51 | -4.03 | 1.88 | -3.08 | -24.48 | -26.57 | -28.01 | -18.29 | -17.68 |
| 6500 | -1.59 | -5.89 | -4.25 | 2.16 | -3.05 | -23.96 | -27.07 | -28.33 | -17.90 | -17.40 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration B.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.25 | -6.46 | -4.59 | 2.60 | 0.61 | -41.75 | -30.53 | -31.03 | -32.00 | -35.82 |
| 1600 | -1.40 | -6.02 | -4.30 | 2.31 | 0.67 | -40.26 | -30.10 | -30.86 | -32.33 | -38.61 |
| 1700 | -1.55 | -5.63 | -4.05 | 2.04 | 0.69 | -37.67 | -29.50 | -30.98 | -32.78 | -43.14 |
| 1800 | -1.71 | -5.27 | -3.84 | 1.79 | 0.75 | -35.66 | -29.23 | -31.40 | -33.19 | -46.55 |
| 1900 | -1.86 | -4.95 | -3.67 | 1.55 | 0.76 | -34.23 | -29.30 | -31.81 | -33.06 | -41.78 |
| 2000 | -2.01 | -4.65 | -3.53 | 1.32 | 0.80 | -32.46 | -29.08 | -32.66 | -33.03 | -38.29 |
| 2100 | -2.18 | -4.37 | -3.41 | 1.10 | 0.88 | -31.22 | -29.54 | -33.89 | -33.37 | -34.72 |
| 2200 | -2.34 | -4.13 | -3.33 | 0.90 | 0.91 | -30.70 | -29.76 | -33.74 | -33.30 | -32.65 |
| 2300 | -2.49 | -3.91 | -3.26 | 0.71 | 0.94 | -30.20 | -29.42 | -33.52 | -32.68 | -31.68 |
| 2400 | -2.65 | -3.70 | -3.21 | 0.53 | 1.02 | -29.69 | -29.23 | -33.43 | -32.44 | -30.71 |
| 2500 | -2.81 | -3.53 | -3.18 | 0.36 | 1.16 | -29.41 | -29.03 | -32.49 | -32.50 | -29.65 |
| 2650 | -3.04 | -3.29 | -3.16 | 0.12 | 1.20 | -29.16 | -29.82 | -38.00 | -34.02 | -30.95 |
| 2800 | -3.25 | -3.08 | -3.17 | 0.09 | 1.33 | -29.19 | -27.18 | -28.63 | -31.41 | -27.96 |
| 2950 | -3.45 | -2.91 | -3.18 | 0.28 | 1.48 | -29.86 | -29.13 | -31.39 | -31.82 | -29.40 |
| 3100 | -3.63 | -2.76 | -3.22 | 0.43 | 1.57 | -30.65 | -27.52 | -26.29 | -32.79 | -28.05 |
| 3250 | -3.80 | -2.66 | -3.26 | 0.57 | 1.71 | -30.06 | -28.13 | -29.09 | -32.54 | -29.56 |
| 3400 | -3.94 | -2.59 | -3.32 | 0.68 | 1.77 | -30.30 | -25.31 | -24.42 | -34.26 | -28.42 |
| 3550 | -4.05 | -2.53 | -3.36 | 0.77 | 1.90 | -31.67 | -26.42 | -26.92 | -30.32 | -28.13 |
| 3700 | -4.15 | -2.51 | -3.41 | 0.84 | 2.01 | -32.29 | -23.81 | -24.45 | -33.47 | -29.27 |
| 3850 | -4.22 | -2.52 | -3.45 | 0.89 | 2.20 | -30.76 | -26.17 | -26.33 | -29.53 | -31.06 |
| 4000 | -4.25 | -2.51 | -3.47 | 0.89 | 2.53 | -31.39 | -24.46 | -24.34 | -30.26 | -33.65 |
| 4150 | -4.28 | -2.50 | -3.48 | 0.90 | 2.28 | -35.10 | -26.69 | -26.22 | -31.36 | -34.07 |
| 4300 | -4.23 | -2.55 | -3.47 | 0.82 | 2.01 | -35.78 | -23.41 | -25.20 | -28.82 | -31.28 |
| 4450 | -4.16 | -2.60 | -3.44 | 0.81 | 1.86 | -31.94 | -24.71 | -25.61 | -29.07 | -31.82 |
| 4600 | -4.07 | -2.64 | -3.41 | 0.72 | 1.79 | -30.84 | -23.73 | -25.81 | -25.57 | -29.33 |
| 4750 | -3.98 | -2.72 | -3.40 | 0.65 | 1.63 | -29.92 | -27.68 | -26.83 | -32.17 | -39.35 |
| 4900 | -3.82 | -2.79 | -3.34 | 0.54 | 1.40 | -29.33 | -26.34 | -25.64 | -27.99 | -24.87 |
| 5050 | -3.65 | -2.92 | -3.30 | 0.39 | 1.75 | -28.66 | -27.35 | -26.65 | -34.30 | -28.77 |
| 5200 | -3.56 | -3.04 | -3.31 | 0.28 | 1.81 | -27.56 | -26.71 | -24.45 | -28.45 | -23.02 |
| 5350 | -3.33 | -3.24 | -3.29 | 0.07 | 2.14 | -27.27 | -27.47 | -25.95 | -30.55 | -25.56 |
| 5500 | -3.19 | -3.47 | -3.33 | 0.12 | 1.79 | -25.49 | -26.93 | -25.89 | -32.97 | -27.20 |
| 5600 | -3.09 | -3.68 | -3.40 | 0.29 | 1.37 | -25.50 | -23.14 | -23.58 | -30.98 | -23.03 |
| 5700 | -2.94 | -3.78 | -3.38 | 0.41 | 2.08 | -24.00 | -21.94 | -23.61 | -32.94 | -23.09 |
| 5800 | -2.82 | -4.03 | -3.47 | 0.60 | 1.87 | -23.77 | -19.96 | -22.16 | -32.28 | -23.70 |
| 5900 | -2.70 | -4.20 | -3.51 | 0.75 | 1.93 | -22.96 | -25.18 | -25.73 | -26.03 | -24.95 |
| 6000 | -2.51 | -4.58 | -3.67 | 1.04 | 1.79 | -23.10 | -18.14 | -20.33 | -28.02 | -23.20 |
| 6100 | -2.38 | -4.73 | -3.71 | 1.17 | 1.91 | -22.83 | -18.25 | -20.08 | -28.07 | -23.28 |
| 6200 | -2.25 | -4.99 | -3.83 | 1.37 | 1.98 | -22.79 | -17.88 | -19.47 | -28.98 | -24.55 |
| 6300 | -2.11 | -5.29 | -3.98 | 1.63 | 1.79 | -23.80 | -22.48 | -21.61 | -24.52 | -25.18 |
| 6400 | -1.95 | -5.64 | -4.18 | 1.84 | 1.86 | -24.02 | -17.68 | -18.29 | -28.01 | -26.57 |
| 6500 | -1.78 | -6.02 | -4.40 | 2.12 | 2.25 | -23.82 | -17.40 | -17.90 | -28.33 | -27.07 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration C.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.25 | -6.46 | -4.59 | 2.58 | 0.31 | -37.60 | -31.03 | -30.53 | -35.82 | -32.00 |
| 1600 | -1.40 | -6.03 | -4.30 | 2.29 | 0.30 | -36.76 | -30.86 | -30.10 | -38.61 | -32.33 |
| 1700 | -1.55 | -5.63 | -4.05 | 2.02 | 0.32 | -36.01 | -30.98 | -29.50 | -43.14 | -32.78 |
| 1800 | -1.70 | -5.28 | -3.85 | 1.77 | 0.35 | -35.41 | -31.40 | -29.23 | -46.55 | -33.19 |
| 1900 | -1.85 | -4.94 | -3.66 | 1.52 | 0.39 | -34.90 | -31.81 | -29.30 | -41.78 | -33.06 |
| 2000 | -2.01 | -4.65 | -3.53 | 1.30 | 0.45 | -34.25 | -32.66 | -29.08 | -38.29 | -33.03 |
| 2100 | -2.17 | -4.38 | -3.41 | 1.08 | 0.43 | -34.00 | -33.89 | -29.54 | -34.72 | -33.37 |
| 2200 | -2.33 | -4.14 | -3.33 | 0.88 | 0.44 | -34.05 | -33.74 | -29.76 | -32.65 | -33.30 |
| 2300 | -2.49 | -3.92 | -3.26 | 0.69 | 0.53 | -33.94 | -33.52 | -29.42 | -31.68 | -32.68 |
| 2400 | -2.65 | -3.72 | -3.22 | 0.51 | 0.55 | -33.86 | -33.43 | -29.23 | -30.71 | -32.44 |
| 2500 | -2.80 | -3.53 | -3.18 | 0.34 | 0.56 | -33.44 | -32.49 | -29.03 | -29.65 | -32.50 |
| 2650 | -3.03 | -3.29 | -3.16 | 0.11 | 0.71 | -32.88 | -38.00 | -29.82 | -30.95 | -34.02 |
| 2800 | -3.25 | -3.09 | -3.17 | 0.11 | 0.76 | -32.56 | -28.63 | -27.18 | -27.96 | -31.41 |
| 2950 | -3.44 | -2.91 | -3.18 | 0.29 | 0.81 | -31.72 | -31.39 | -29.13 | -29.40 | -31.82 |
| 3100 | -3.63 | -2.77 | -3.22 | 0.46 | 0.89 | -32.23 | -26.29 | -27.52 | -28.05 | -32.79 |
| 3250 | -3.80 | -2.67 | -3.27 | 0.58 | 0.95 | -32.35 | -29.09 | -28.13 | -29.56 | -32.54 |
| 3400 | -3.95 | -2.57 | -3.31 | 0.72 | 0.99 | -32.93 | -24.42 | -25.31 | -28.42 | -34.26 |
| 3550 | -4.07 | -2.49 | -3.35 | 0.79 | 1.09 | -34.10 | -26.92 | -26.42 | -28.13 | -30.32 |
| 3700 | -4.17 | -2.45 | -3.39 | 0.88 | 1.21 | -33.11 | -24.45 | -23.81 | -29.27 | -33.47 |
| 3850 | -4.26 | -2.41 | -3.43 | 0.91 | 1.17 | -33.02 | -26.33 | -26.17 | -31.06 | -29.53 |
| 4000 | -4.27 | -2.40 | -3.43 | 0.94 | 1.33 | -34.01 | -24.34 | -24.46 | -33.65 | -30.26 |
| 4150 | -4.26 | -2.41 | -3.43 | 0.94 | 1.33 | -34.95 | -26.22 | -26.69 | -34.07 | -31.36 |
| 4300 | -4.20 | -2.46 | -3.42 | 0.90 | 1.34 | -38.71 | -25.20 | -23.41 | -31.28 | -28.82 |
| 4450 | -4.13 | -2.48 | -3.38 | 0.84 | 1.30 | -36.47 | -25.61 | -24.71 | -31.82 | -29.07 |
| 4600 | -4.05 | -2.53 | -3.36 | 0.78 | 1.32 | -32.79 | -25.81 | -23.73 | -29.33 | -25.57 |
| 4750 | -3.97 | -2.63 | -3.36 | 0.68 | 1.23 | -30.41 | -26.83 | -27.68 | -39.35 | -32.17 |
| 4900 | -3.83 | -2.76 | -3.33 | 0.56 | 0.91 | -30.68 | -25.64 | -26.34 | -24.87 | -27.99 |
| 5050 | -3.67 | -2.91 | -3.30 | 0.39 | 0.89 | -33.33 | -26.65 | -27.35 | -28.77 | -34.30 |
| 5200 | -3.58 | -3.04 | -3.32 | 0.30 | 0.49 | -30.47 | -24.45 | -26.71 | -23.02 | -28.45 |
| 5350 | -3.36 | -3.26 | -3.31 | 0.09 | 1.00 | -29.49 | -25.95 | -27.47 | -25.56 | -30.55 |
| 5500 | -3.22 | -3.51 | -3.37 | 0.12 | 0.34 | -28.49 | -25.89 | -26.93 | -27.20 | -32.97 |
| 5600 | -3.11 | -3.72 | -3.43 | 0.26 | -0.03 | -30.85 | -23.58 | -23.14 | -23.03 | -30.98 |
| 5700 | -2.96 | -3.81 | -3.41 | 0.38 | 0.70 | -28.92 | -23.61 | -21.94 | -23.09 | -32.94 |
| 5800 | -2.83 | -4.07 | -3.49 | 0.56 | 0.62 | -28.77 | -22.16 | -19.96 | -23.70 | -32.28 |
| 5900 | -2.71 | -4.23 | -3.54 | 0.75 | 0.45 | -27.55 | -25.73 | -25.18 | -24.95 | -26.03 |
| 6000 | -2.52 | -4.60 | -3.68 | 0.97 | 0.34 | -28.01 | -20.33 | -18.14 | -23.20 | -28.02 |
| 6100 | -2.40 | -4.76 | -3.74 | 1.11 | 0.54 | -26.58 | -20.08 | -18.25 | -23.28 | -28.07 |
| 6200 | -2.26 | -5.01 | -3.85 | 1.30 | 0.70 | -25.57 | -19.47 | -17.88 | -24.55 | -28.98 |
| 6300 | -2.13 | -5.36 | -4.04 | 1.63 | 0.42 | -25.67 | -21.61 | -22.48 | -25.18 | -24.52 |
| 6400 | -1.96 | -5.69 | -4.21 | 1.78 | 0.65 | -25.18 | -18.29 | -17.68 | -26.57 | -28.01 |
| 6500 | -1.79 | -6.07 | -4.44 | 2.06 | 0.75 | -24.79 | -17.90 | -17.40 | -27.07 | -28.33 |

* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

Stripline Surface Mount

# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Data

Test Conditions: Input Power = +5 dbm, Temperature = +105°C, Configuration D.

| Freq. (MHz) | Total Loss* (dB) | | | Amp. Unb. (±dB) | Ph. Unb. (deg) | Isolation (dB) | Return Loss (dB) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Sum-Port 1 | Sum-Port 2 | Average | Half P-P | Rel. to 90° | Port1-Port2 | Sum | Port 1 | Port 2 | Iso |
| 1500 | -1.30 | -6.45 | -4.60 | 2.60 | 0.02 | -37.40 | -32.00 | -35.82 | -30.53 | -31.03 |
| 1600 | -1.44 | -6.02 | -4.31 | 2.31 | 0.00 | -36.81 | -32.33 | -38.61 | -30.10 | -30.86 |
| 1700 | -1.60 | -5.63 | -4.07 | 2.04 | -0.06 | -36.10 | -32.78 | -43.14 | -29.50 | -30.98 |
| 1800 | -1.75 | -5.27 | -3.86 | 1.79 | -0.08 | -35.56 | -33.19 | -46.55 | -29.23 | -31.40 |
| 1900 | -1.90 | -4.94 | -3.68 | 1.55 | -0.14 | -35.13 | -33.06 | -41.78 | -29.30 | -31.81 |
| 2000 | -2.06 | -4.64 | -3.54 | 1.32 | -0.21 | -34.59 | -33.03 | -38.29 | -29.08 | -32.66 |
| 2100 | -2.22 | -4.37 | -3.43 | 1.10 | -0.24 | -34.44 | -33.37 | -34.72 | -29.54 | -33.89 |
| 2200 | -2.38 | -4.13 | -3.34 | 0.90 | -0.27 | -34.43 | -33.30 | -32.65 | -29.76 | -33.74 |
| 2300 | -2.54 | -3.91 | -3.28 | 0.71 | -0.31 | -34.26 | -32.68 | -31.68 | -29.42 | -33.52 |
| 2400 | -2.69 | -3.70 | -3.22 | 0.53 | -0.34 | -34.01 | -32.44 | -30.71 | -29.23 | -33.43 |
| 2500 | -2.85 | -3.52 | -3.20 | 0.37 | -0.31 | -33.48 | -32.50 | -29.65 | -29.03 | -32.49 |
| 2650 | -3.08 | -3.29 | -3.18 | 0.12 | -0.45 | -32.58 | -34.02 | -30.95 | -29.82 | -38.00 |
| 2800 | -3.29 | -3.08 | -3.19 | 0.08 | -0.46 | -32.25 | -31.41 | -27.96 | -27.18 | -28.63 |
| 2950 | -3.48 | -2.91 | -3.20 | 0.27 | -0.43 | -31.77 | -31.82 | -29.40 | -29.13 | -31.39 |
| 3100 | -3.65 | -2.77 | -3.23 | 0.42 | -0.48 | -31.86 | -32.79 | -28.05 | -27.52 | -26.29 |
| 3250 | -3.81 | -2.66 | -3.27 | 0.56 | -0.44 | -32.29 | -32.54 | -29.56 | -28.13 | -29.09 |
| 3400 | -3.94 | -2.59 | -3.32 | 0.65 | -0.53 | -33.14 | -34.26 | -28.42 | -25.31 | -24.42 |
| 3550 | -4.04 | -2.52 | -3.35 | 0.75 | -0.74 | -34.22 | -30.32 | -28.13 | -26.42 | -26.92 |
| 3700 | -4.13 | -2.49 | -3.39 | 0.79 | -0.93 | -34.32 | -33.47 | -29.27 | -23.81 | -24.45 |
| 3850 | -4.20 | -2.49 | -3.42 | 0.85 | -1.18 | -33.74 | -29.53 | -31.06 | -26.17 | -26.33 |
| 4000 | -4.23 | -2.50 | -3.45 | 0.83 | -1.74 | -33.96 | -30.26 | -33.65 | -24.46 | -24.34 |
| 4150 | -4.27 | -2.52 | -3.48 | 0.89 | -2.11 | -34.36 | -31.36 | -34.07 | -26.69 | -26.22 |
| 4300 | -4.25 | -2.57 | -3.49 | 0.83 | -2.22 | -36.27 | -28.82 | -31.28 | -23.41 | -25.20 |
| 4450 | -4.17 | -2.59 | -3.45 | 0.81 | -2.22 | -36.41 | -29.07 | -31.82 | -24.71 | -25.61 |
| 4600 | -4.09 | -2.61 | -3.41 | 0.73 | -2.15 | -32.69 | -25.57 | -29.33 | -23.73 | -25.81 |
| 4750 | -3.99 | -2.69 | -3.39 | 0.65 | -2.25 | -31.03 | -32.17 | -39.35 | -27.68 | -26.83 |
| 4900 | -3.88 | -2.76 | -3.36 | 0.55 | -2.41 | -31.71 | -27.99 | -24.87 | -26.34 | -25.64 |
| 5050 | -3.69 | -2.89 | -3.31 | 0.39 | -1.92 | -32.86 | -34.30 | -28.77 | -27.35 | -26.65 |
| 5200 | -3.61 | -3.02 | -3.33 | 0.27 | -2.00 | -30.40 | -28.45 | -23.02 | -26.71 | -24.45 |
| 5350 | -3.41 | -3.23 | -3.32 | 0.06 | -1.89 | -29.19 | -30.55 | -25.56 | -27.47 | -25.95 |
| 5500 | -3.26 | -3.46 | -3.36 | 0.13 | -1.94 | -27.97 | -32.97 | -27.20 | -26.93 | -25.89 |
| 5600 | -3.09 | -3.68 | -3.40 | 0.35 | -2.31 | -30.02 | -30.98 | -23.03 | -23.14 | -23.58 |
| 5700 | -2.98 | -3.78 | -3.40 | 0.46 | -1.82 | -28.22 | -32.94 | -23.09 | -21.94 | -23.61 |
| 5800 | -2.82 | -4.04 | -3.47 | 0.68 | -2.08 | -28.46 | -32.28 | -23.70 | -19.96 | -22.16 |
| 5900 | -2.72 | -4.21 | -3.53 | 0.76 | -1.99 | -27.47 | -26.03 | -24.95 | -25.18 | -25.73 |
| 6000 | -2.49 | -4.59 | -3.67 | 1.12 | -2.13 | -28.30 | -28.02 | -23.20 | -18.14 | -20.33 |
| 6100 | -2.38 | -4.74 | -3.72 | 1.25 | -2.15 | -27.01 | -28.07 | -23.28 | -18.25 | -20.08 |
| 6200 | -2.21 | -4.99 | -3.82 | 1.47 | -1.83 | -26.02 | -28.98 | -24.55 | -17.88 | -19.47 |
| 6300 | -2.10 | -5.30 | -3.99 | 1.63 | -2.02 | -26.23 | -24.52 | -25.18 | -22.48 | -21.61 |
| 6400 | -1.93 | -5.64 | -4.17 | 1.94 | -2.00 | -25.66 | -28.01 | -26.57 | -17.68 | -18.29 |
| 6500 | -1.75 | -6.02 | -4.39 | 2.22 | -1.74 | -25.19 | -28.33 | -27.07 | -17.40 | -17.90 |

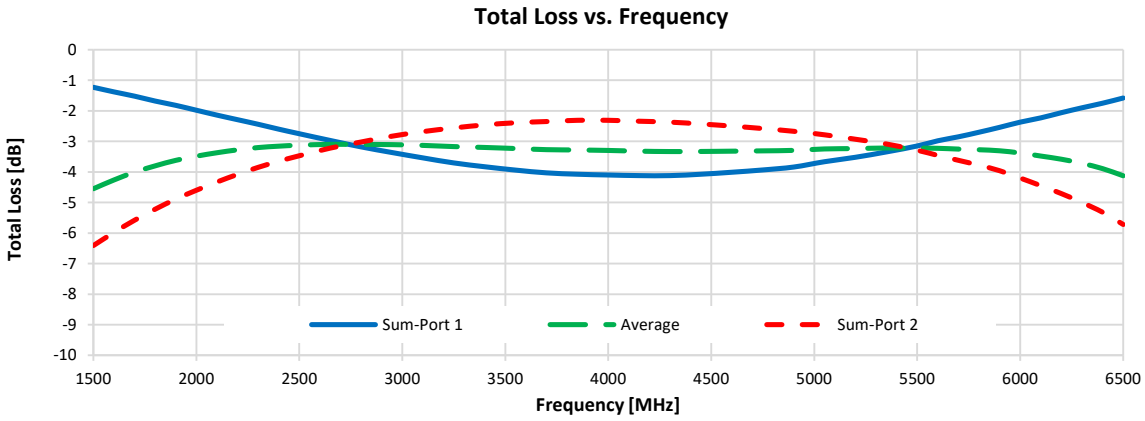
* Total loss is the loss from Sum to each coupled port including the 3 dB theoretical split.

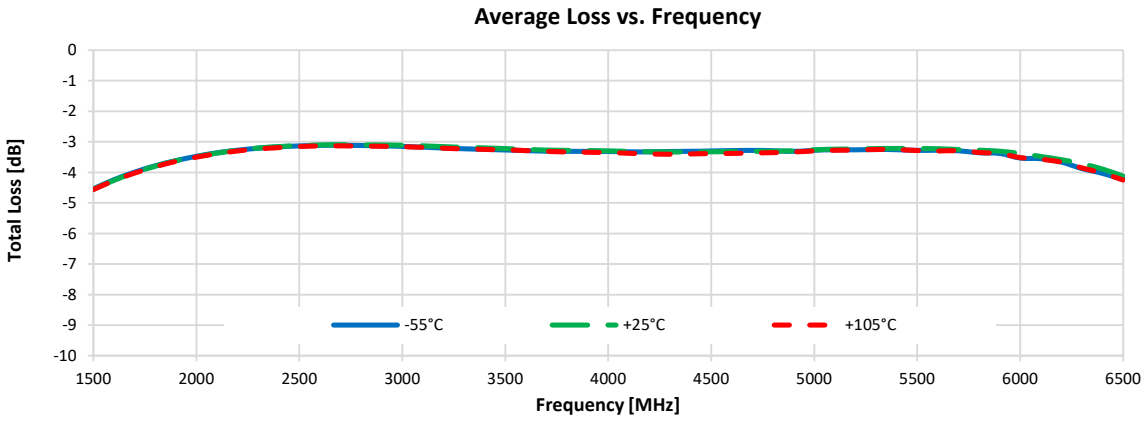
Stripline Surface Mount

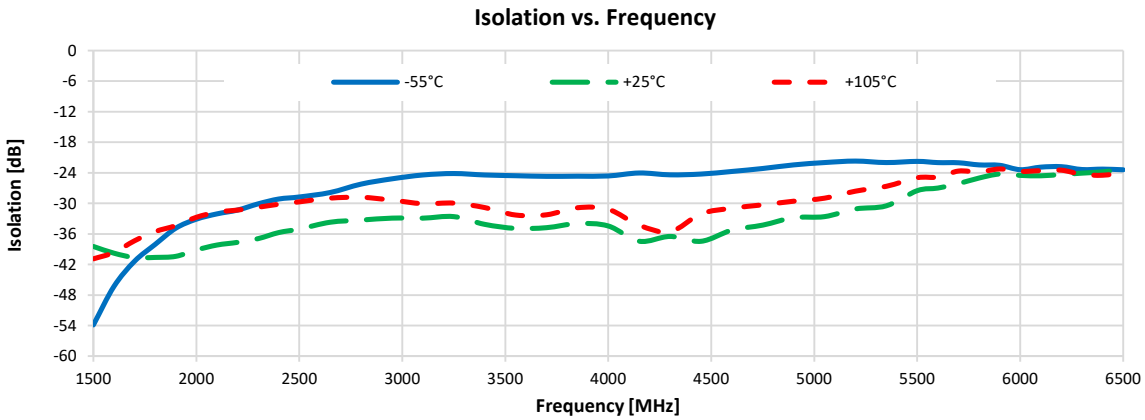
# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration A.



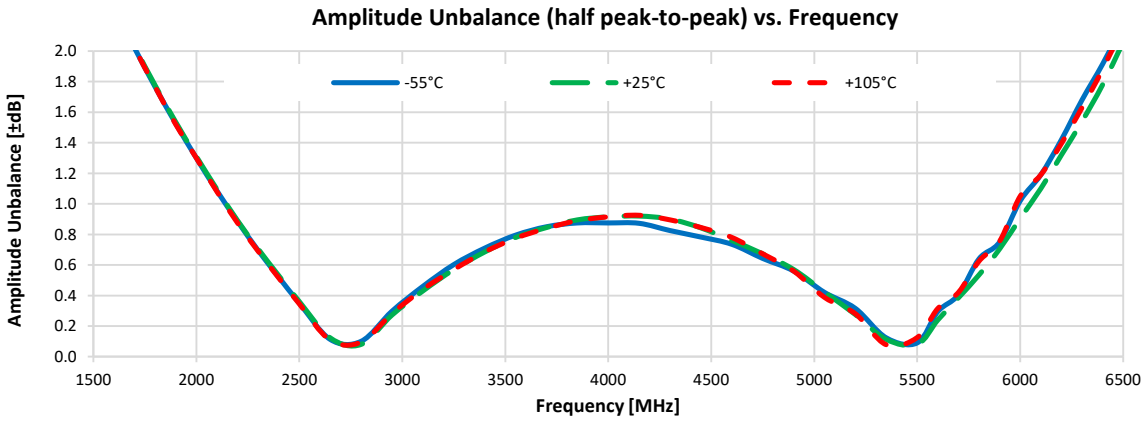



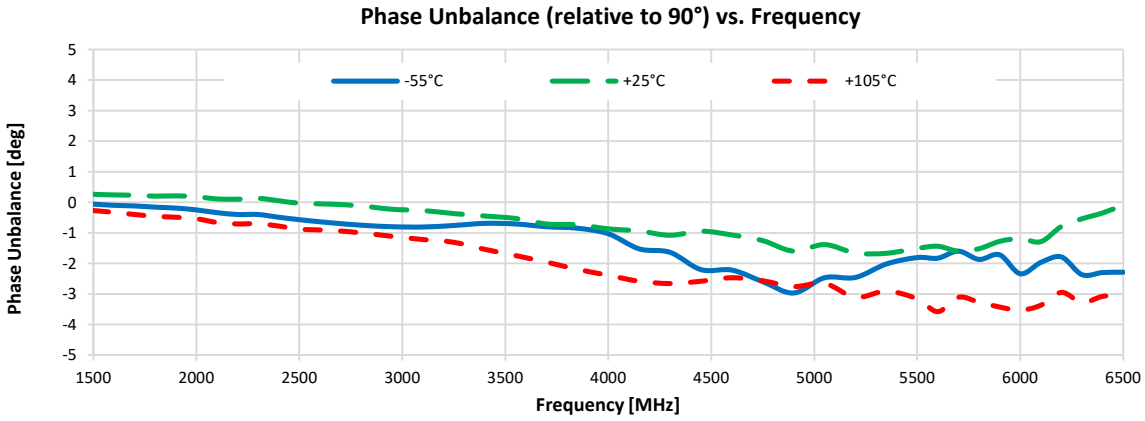



# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration A.

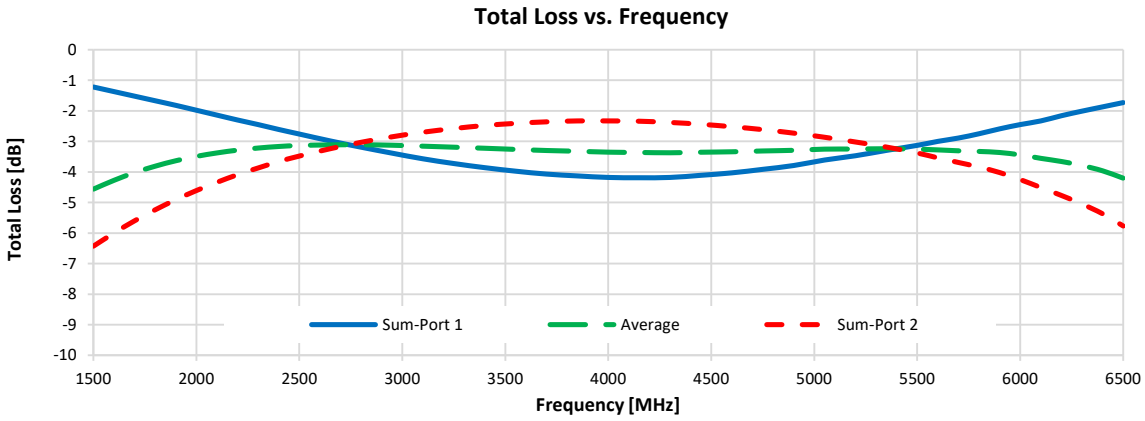


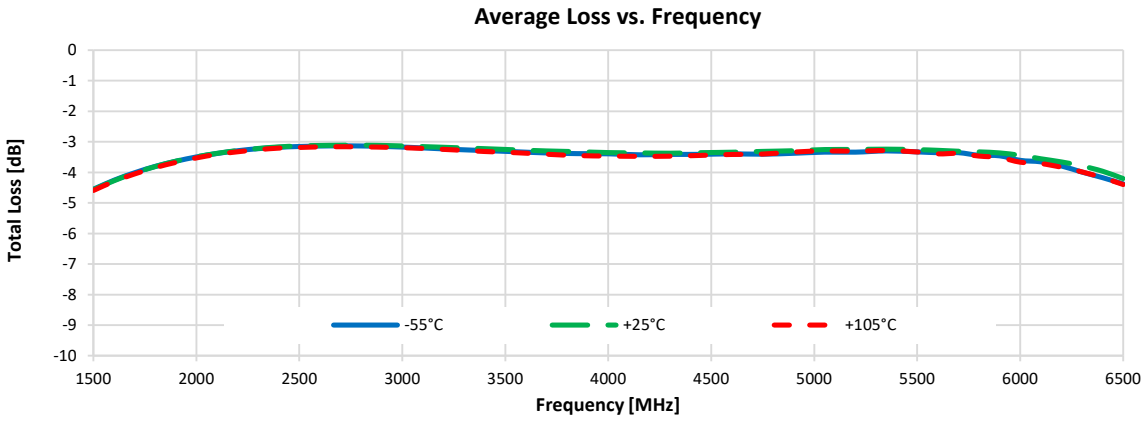



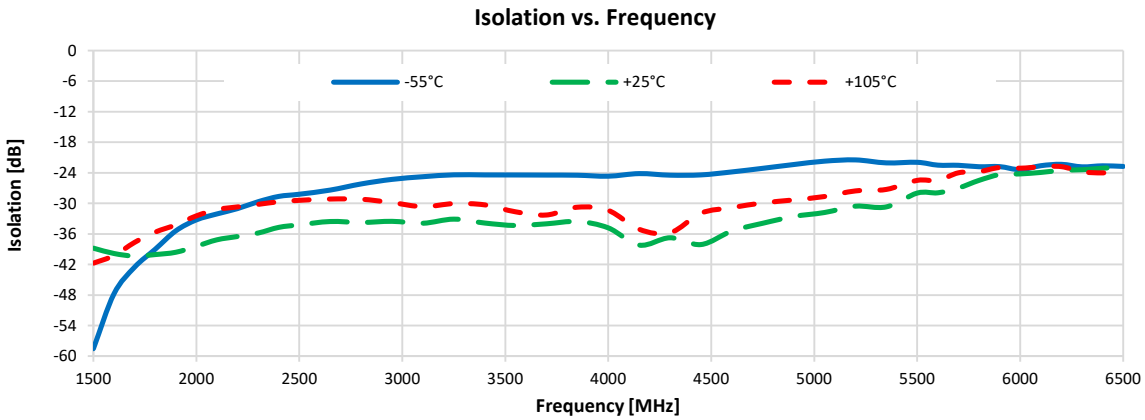
# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration B.



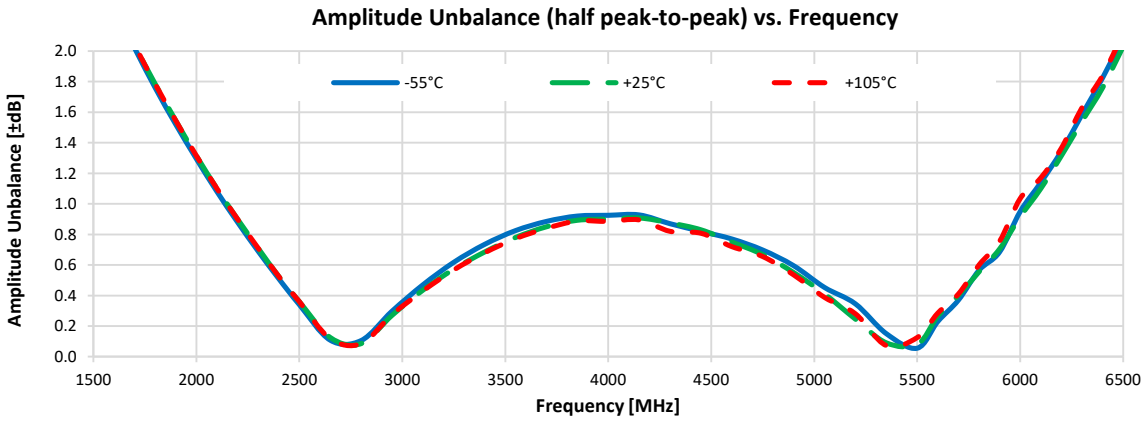



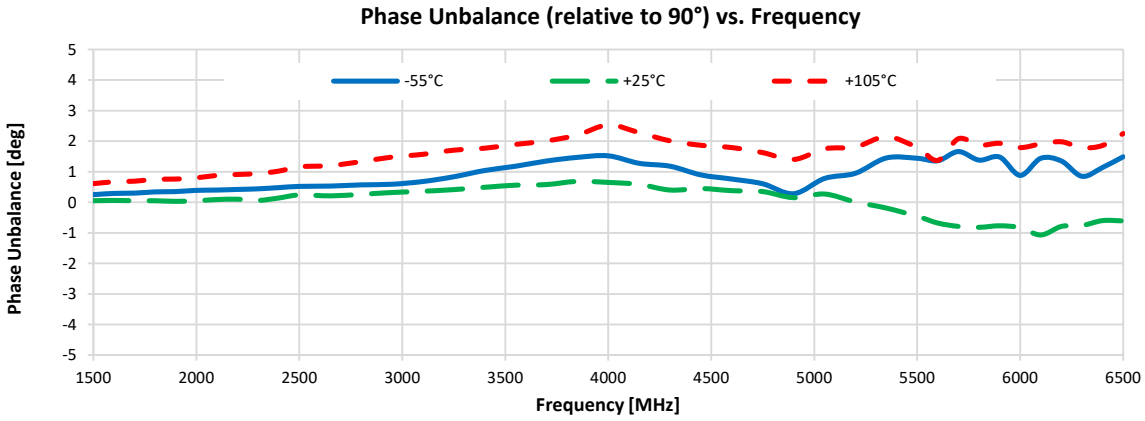



# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration B.

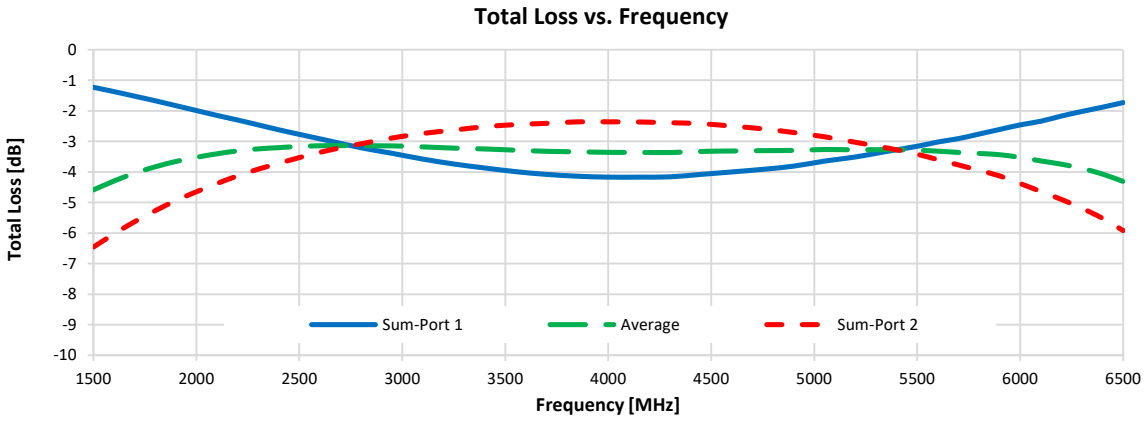


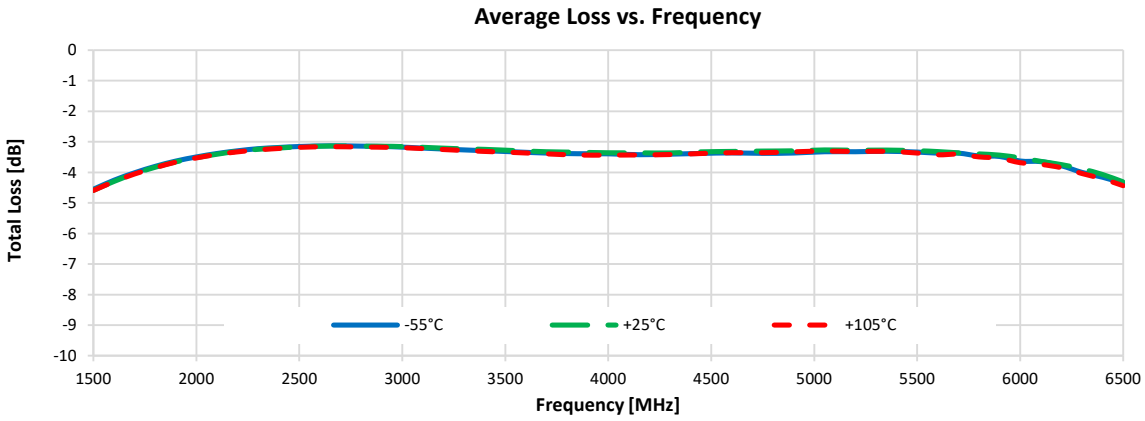



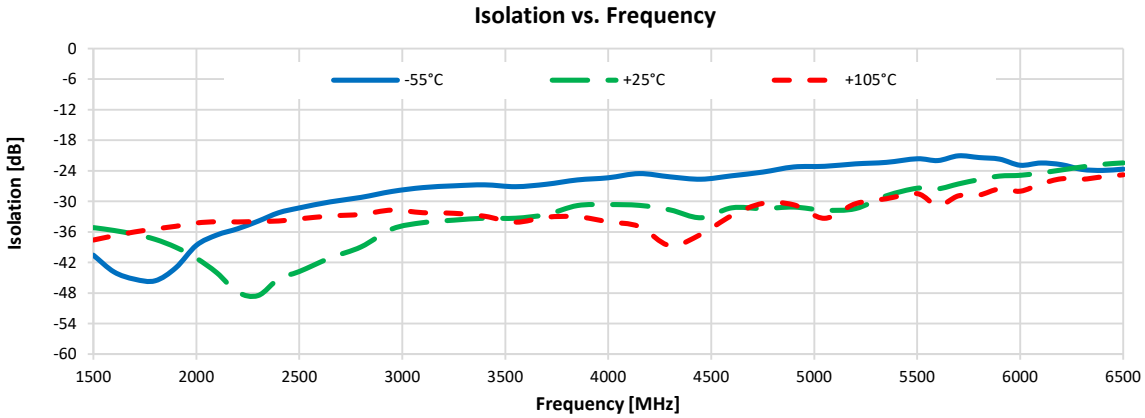
# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration C.



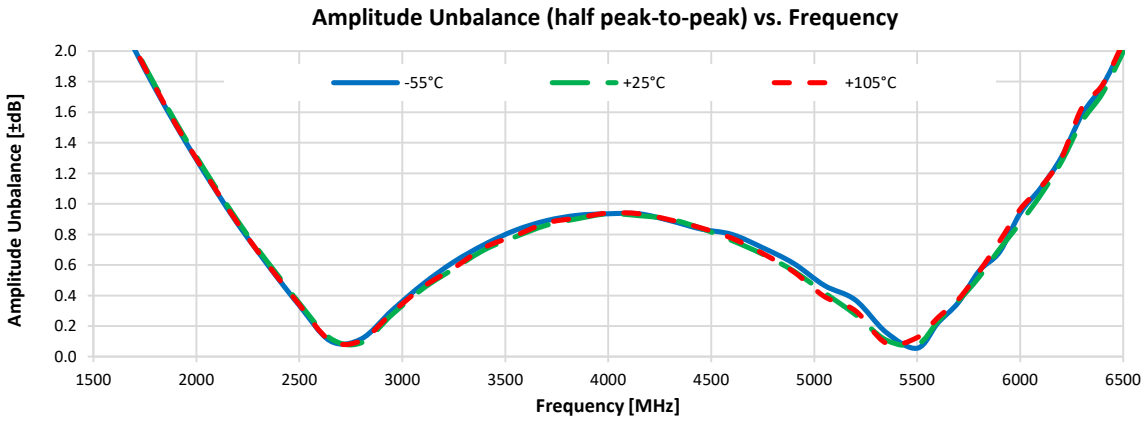



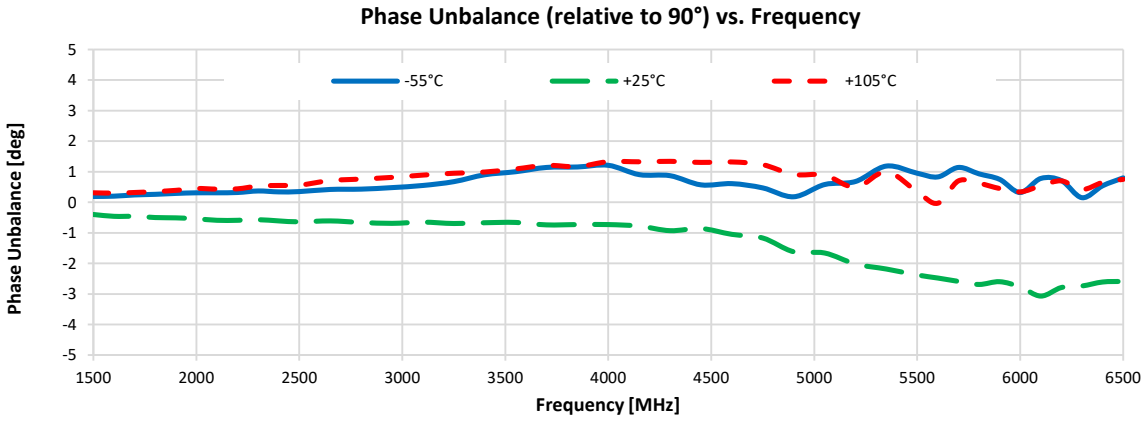



# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration C.

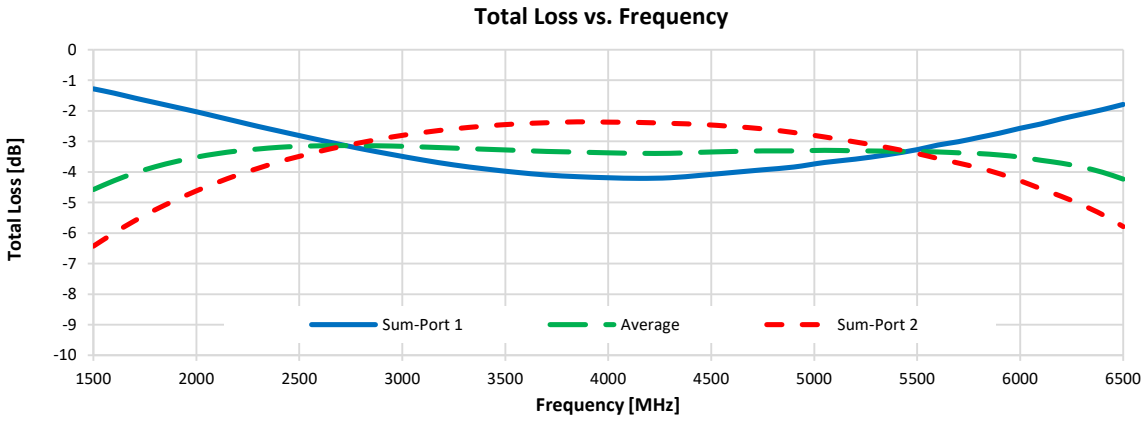


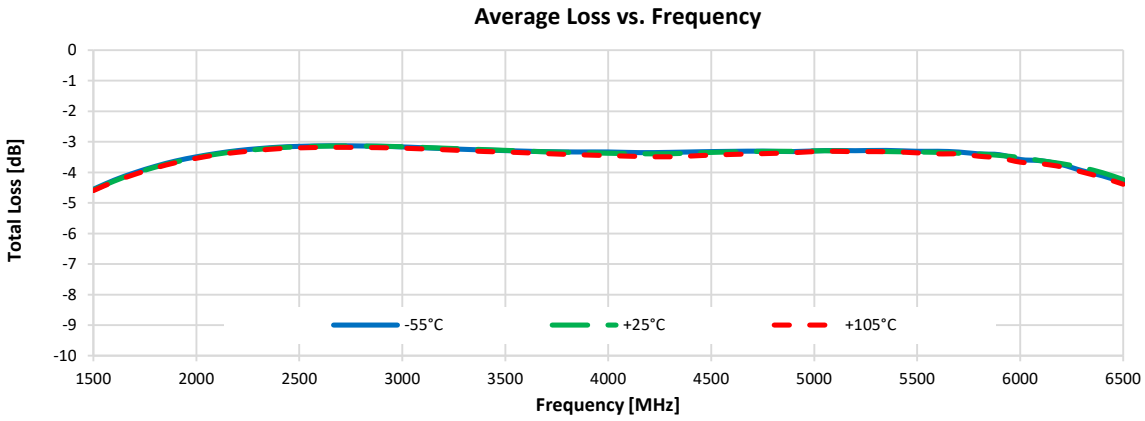



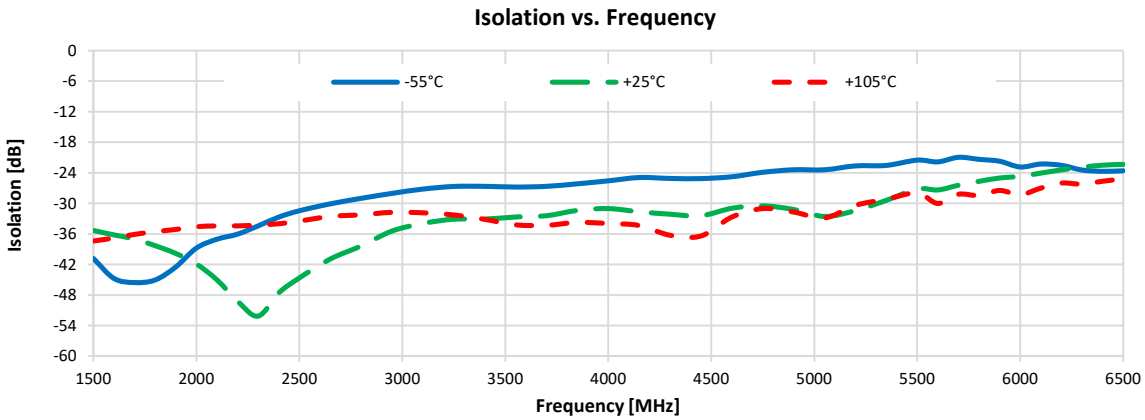
# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration D.



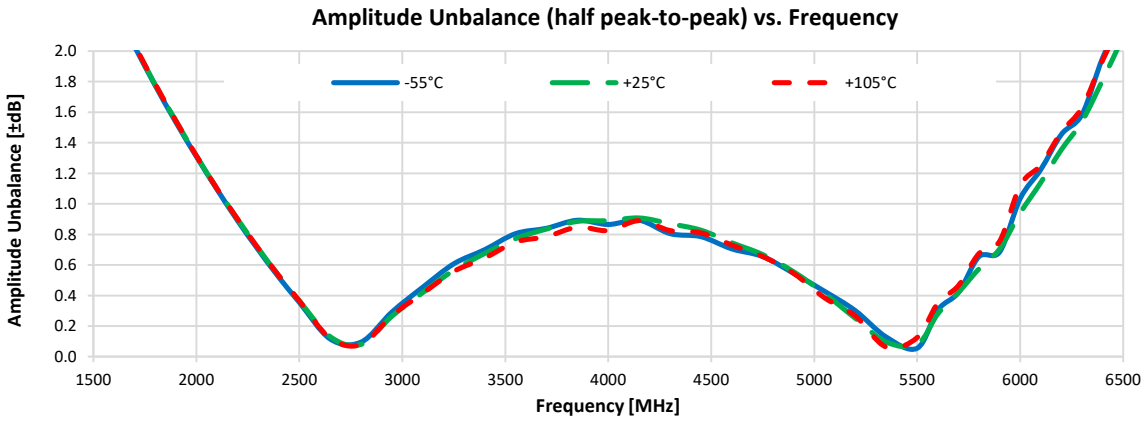



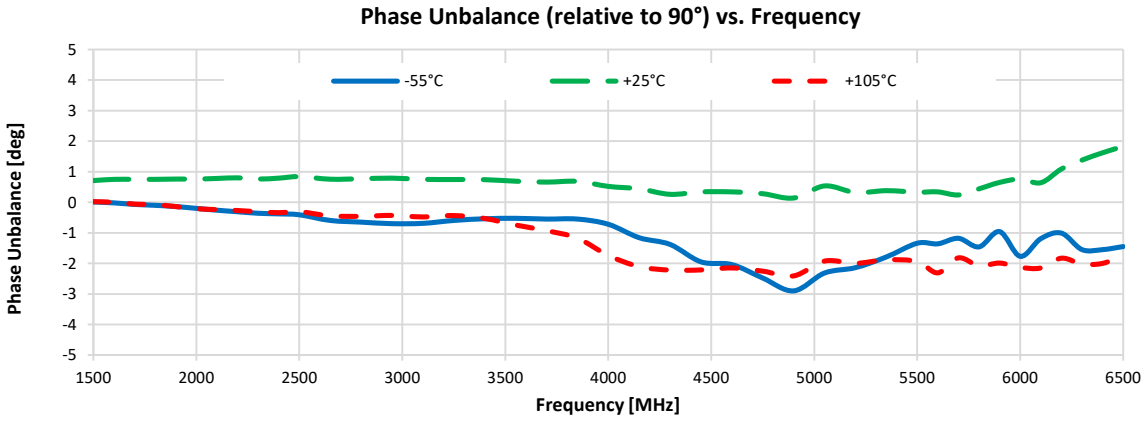



# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration D.

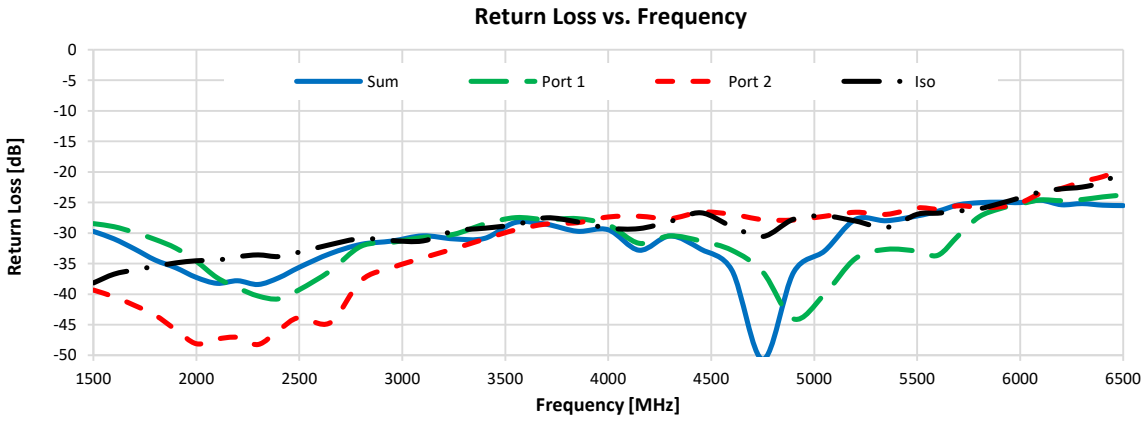


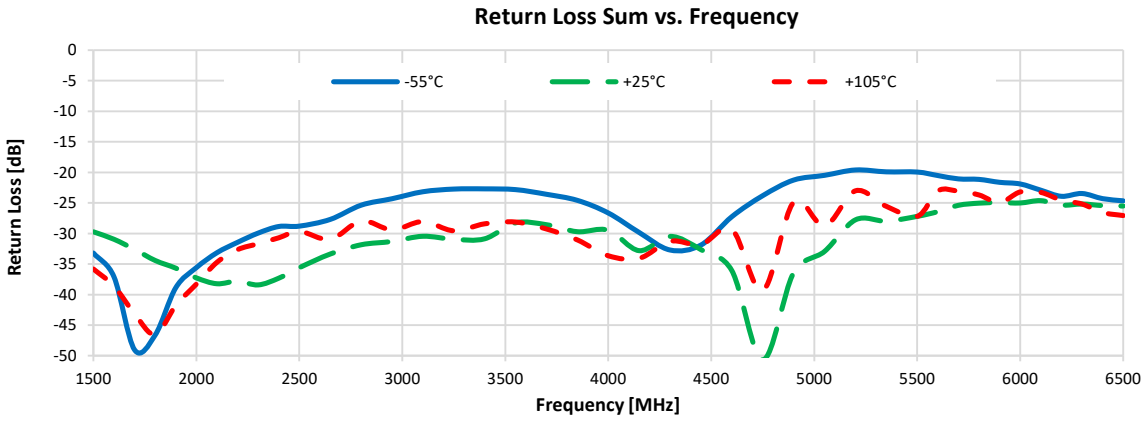



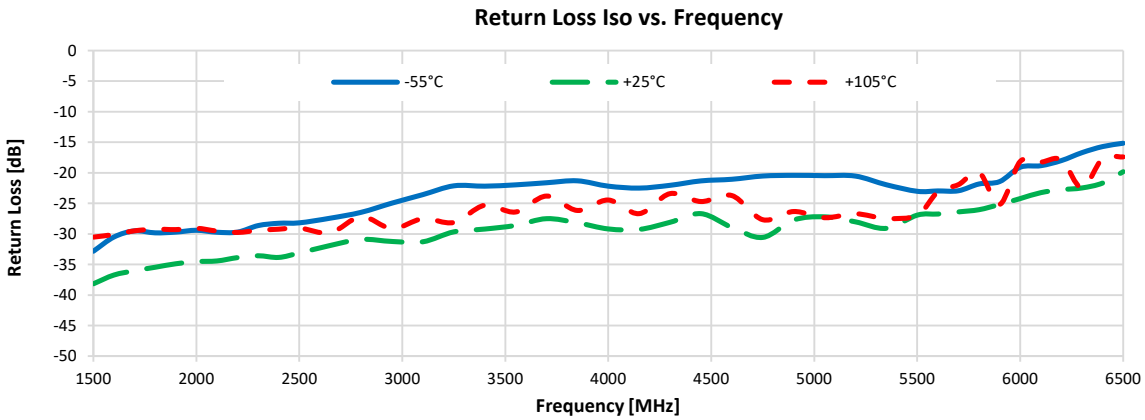
# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration A.



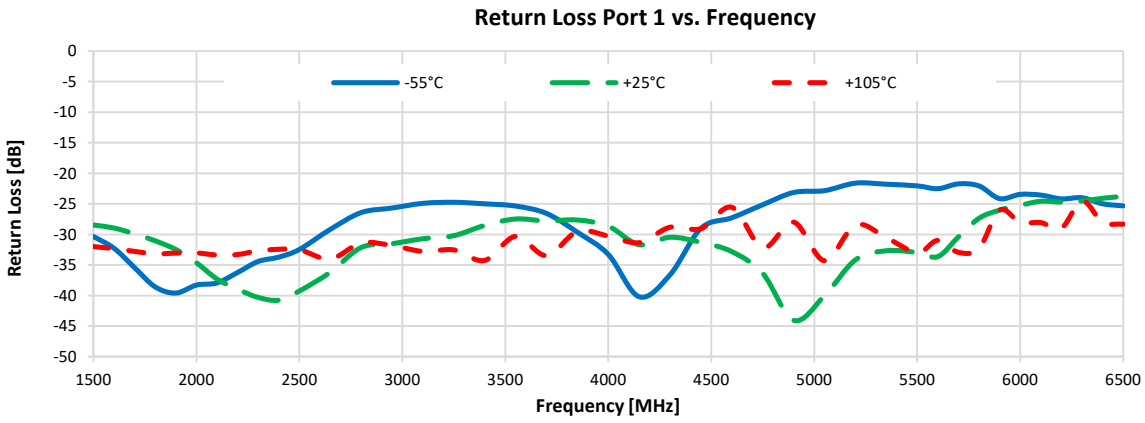



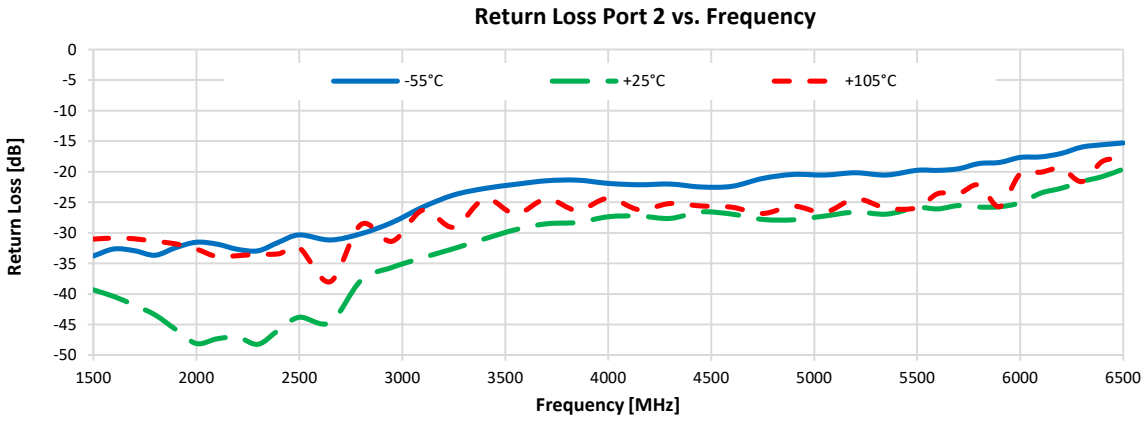



# 2-Way 90° Power Splitter/Combiner QCH-63+

## Typical Performance Graphs

Test Conditions: Input Power = +5 dbm, Configuration A.

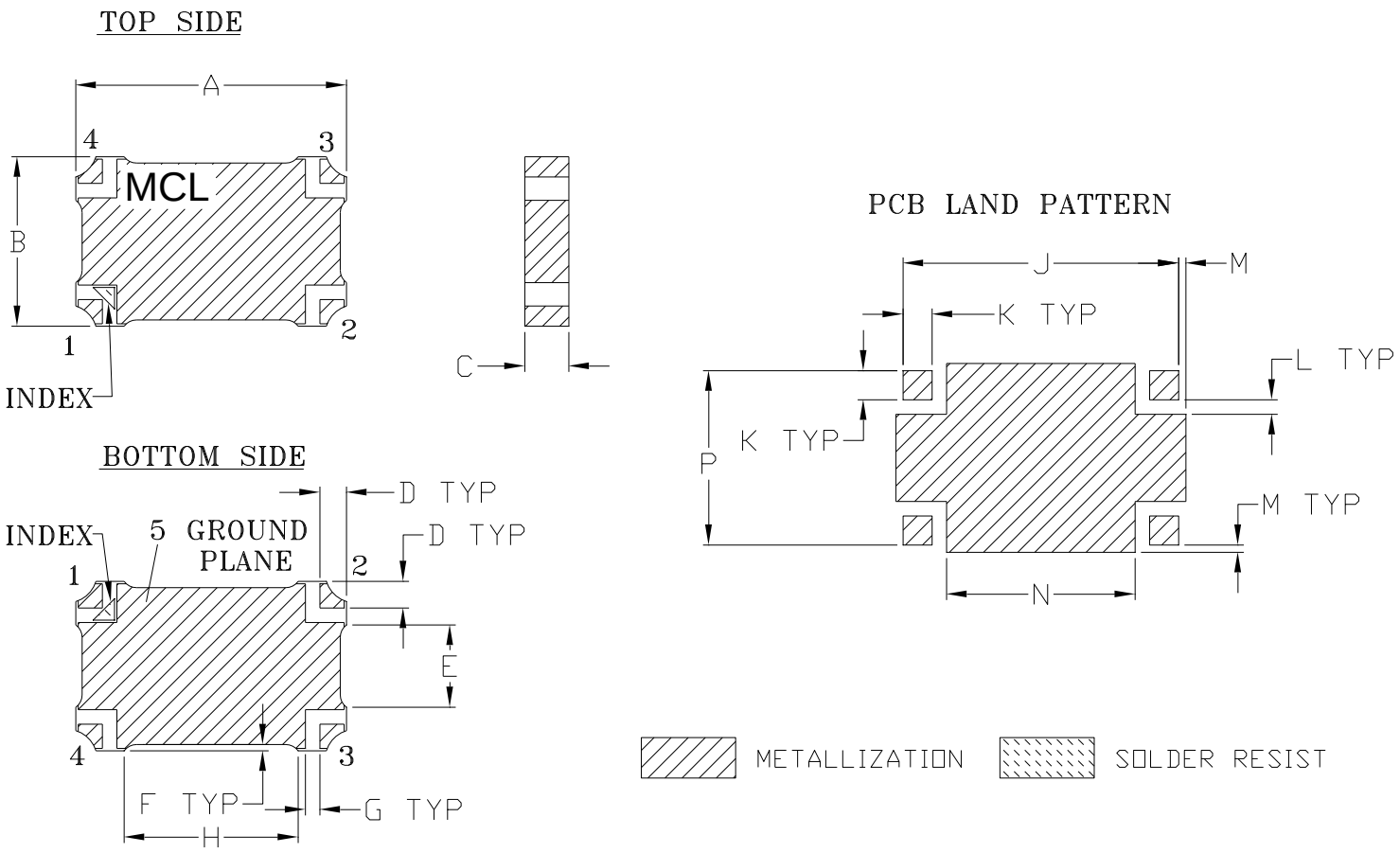


# Case Style PQ

## Outline Dimensions

**PQ2186**




| CASE# | A | B | C | D | E | F | G | H | J | K | L | M | N | P | WT. GRAMS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PQ2186 | .560 (14.22) | .350 (8.89) | .091 (2.31) | .055 (1.40) | .170 (4.32) | .013 (0.33) | .030 (0.76) | .360 (9.14) | .570 (14.48) | .060 (1.52) | .030 (0.76) | .015 (0.38) | .390 (9.91) | .360 (9.14) | 1.4 |

**Dimensions are in inches (mm). Tolerances: 2PL. +/- .03; 3PL. +/- .010**

**Notes:**

1. Base material: Printed wiring laminate.
2. Termination finish:
   For RoHS Cases, all models (+) suffix: 2-5 µinch (.05-.13 microns) Immersion Gold.
   For RoHS-5 Cases, all models no (+) suffix: Tin-Lead plate.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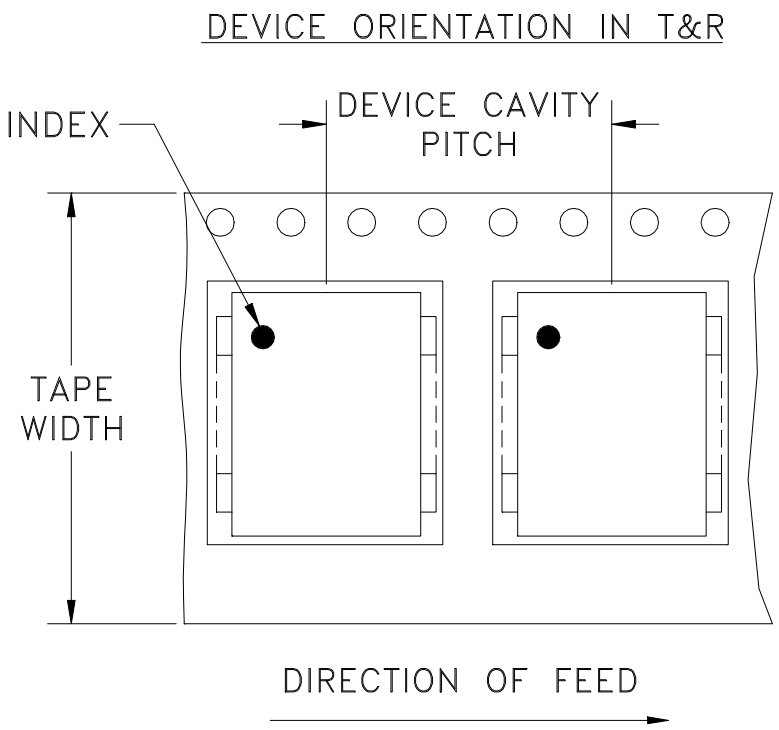
# Tape & Reel Packaging TR-F29




| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel |
|---|---|---|---|
| 24 | 12 | 13 | 500 |

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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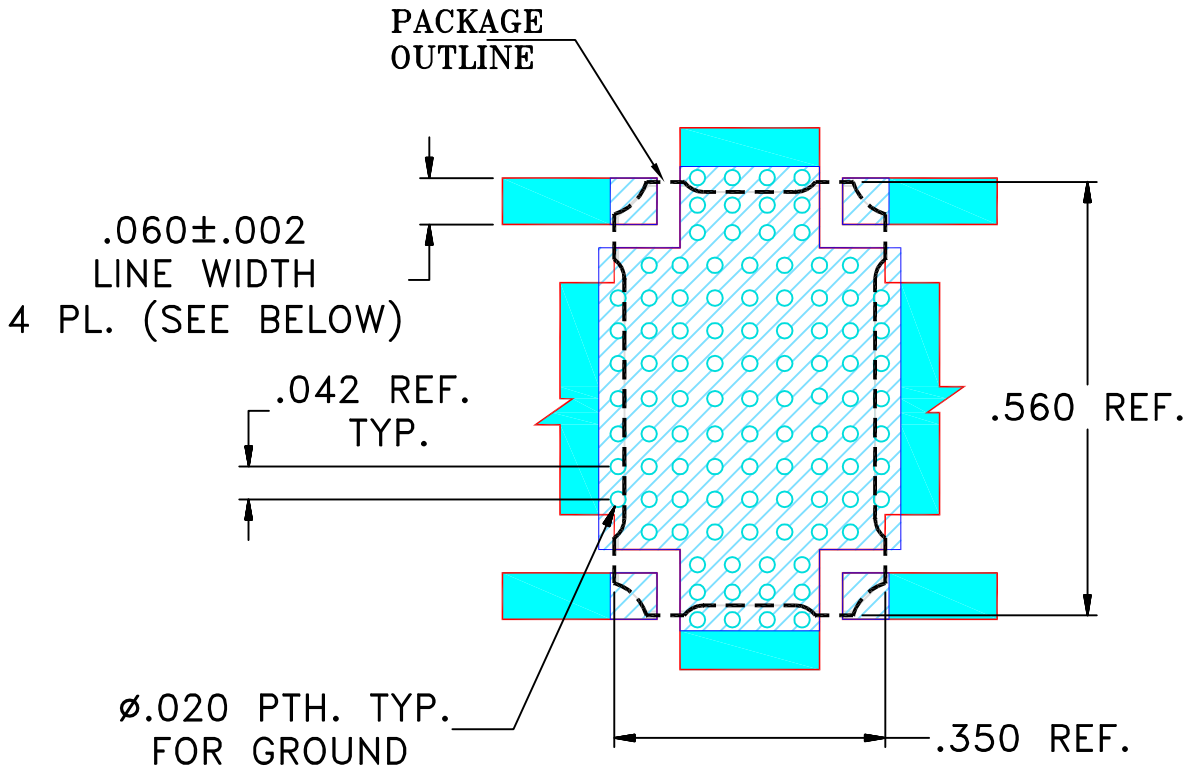
THIRD ANGLE PROJECTION

| REVISIONS | | | | | |
|---|---|---|---|---|---|
| REV | ECN No. | DESCRIPTION | DATE | DR | AUTH |
| OR | M163111 | NEW RELEASE | 10/17 | YS | YB |
| OR | R92246 | NEW RELEASE | 10/17 | YS | YB |
| | | | | | |
| | | | | | |

## SUGGESTED MOUNTING CONFIGURATION

FOR PQ2186 CASE STYLE 04DC01 PIN CONNECTION, 50 OHM




NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RT/DUROID 5880 WITH DIELECTRIC THICKNESS. .020"±.0015". COPPER: 1 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

| UNLESS OTHERWISE SPECIFIED | | INITIALS | DATE |
|---|---|---|---|
| DIMENSIONS ARE IN INCHES | DRAWN | YS (RAVON) | 02 OCT 17 |
| TOLERANCES ON: | CHECKED | HH (RAVON) | 02 OCT 17 |
| 2 PL DECIMALS ± | APPROVED | YB (RAVON) | 02 OCT 17 |
| 3 PL DECIMALS ± .005 | | | |
| ANGLES ± | | | |
| FRACTIONS ± | | | |



ASHEETA1.DWG REV:A DATE:01/12/95

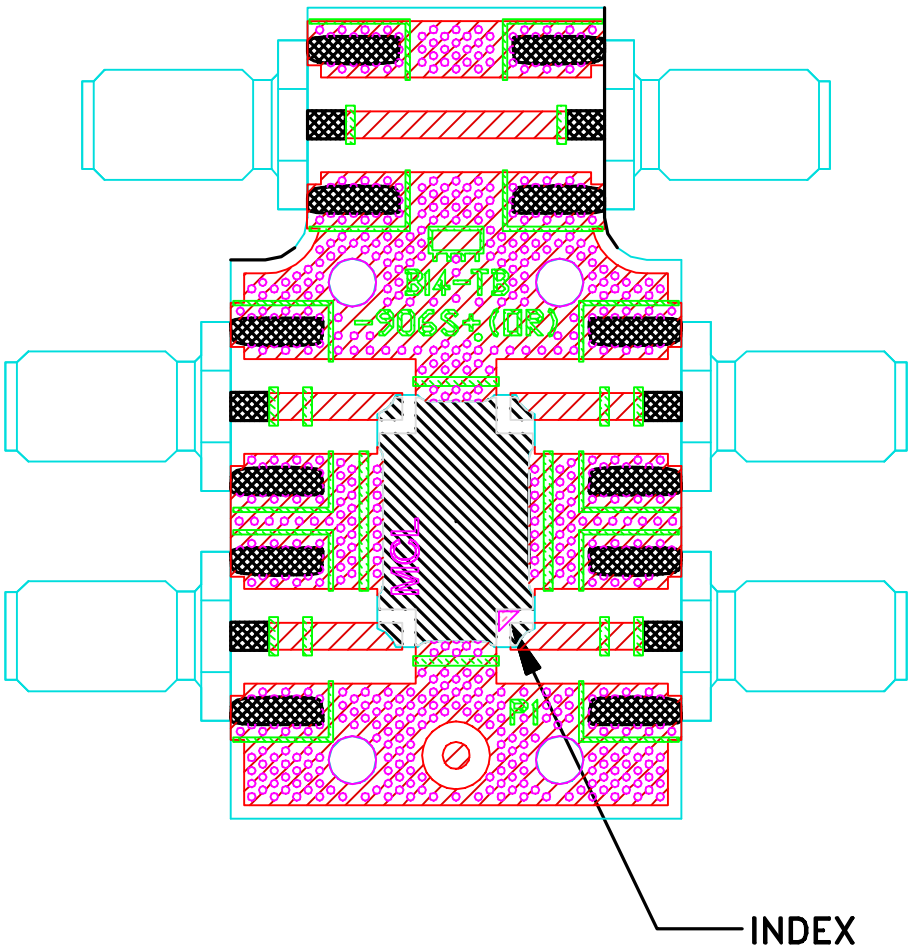
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

# PL FOR QCH PQ2186
# TB-906 (50 Ω)

| SIZE | CODE IDENT | DRAWING NO: | REV: |
|---|---|---|---|
| A | 15542 | 98-PL-528 | OR |

| FILE: | SCALE: | SHEET: |
|---|---|---|
| 98PL528(OR) | 4:1 | 1 OF 1 |

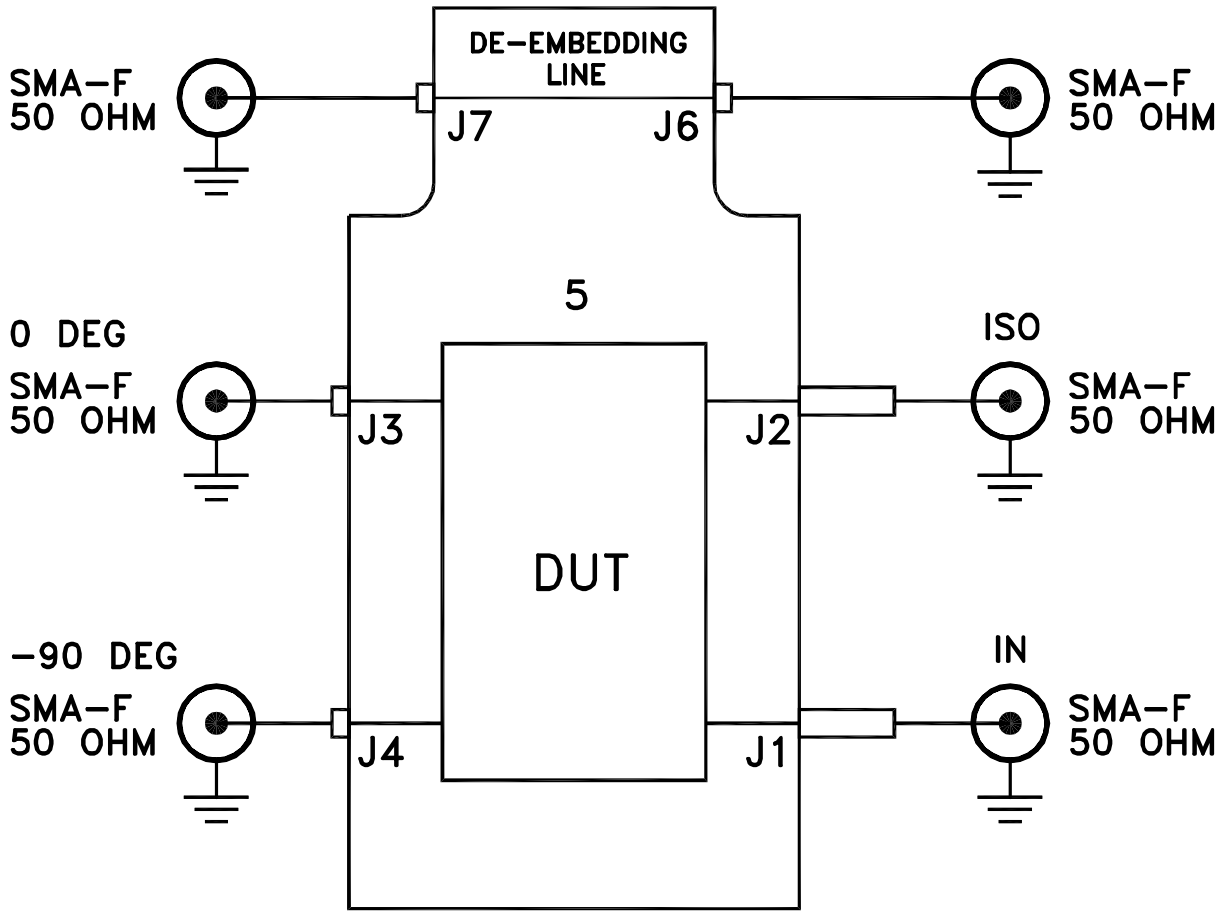
# Evaluation Board and Circuit




TB-906+

NOTES:

1. SMA FEMALE CONNECTORS.
2. PCB MATERIAL: ROGERS RT/DUROID 5880 OR EQUIVALENT, DIELECTRIC CONSTANT=2.2, DIELECTRIC THICKNESS=.020 INCH.




# TB-906+

## Schematic Diagram

Mini-Circuits

**Environmental Specifications** **ENV02T8**

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|---|---|---|
| Operating Temperature | -55° to 105° C<br>Case Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 105°C<br>Ambient Environment | Individual Model Data Sheet |
| Humidity | 90 to 95% RH, 240 hours, 50°C | MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours |
| Thermal Shock | -55° to 100°C, 100 cycles | MIL-STD-202, Method 107, Condition A-3, except +100°C |
| Solder Reflow Heat | Sn-Pb Eutectic Process 225°C peak<br>Pb-Free Process 245° - 250°C peak | J-STD-020C, Table 4-1, 4-2 and 5-2, Figure 5-1 |
| Solderability | 10X Magnification | J-STD-002, Para 4.2.5, Test S, 95% Coverage |
| Vibration (high Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36) | MIL-STD-883, Method 2007.3, Condition A |
| Mechanical Shock | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes | MIL-STD-202, Method 213, Condition A |
| Marking Resistance to Solvents | Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C;<br>distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C | MIL-STD-202, Method 215 |