

Power Dividers as Combiners

The limiting factor for most Wilkinson power dividers used as combiners is power dissipation. When input signals are out of phase, non-coherent or have amplitude unbalance this causes a cancellation across the isolation resistors resulting in power dissipation.

Since these devices are most commonly used as dividers, typical industry designs utilize low power alumina surface mount resistor chips on a thermally insulative circuit board. However, maximum input for combining non-coherent signals on adjacent ports is: $(\text{rated input power of divider} * 5\%) / "N" \# \text{ of input channels}$. If the rated power is exceeded, the chip resistors will heat up and degrade resulting in loss of port-to-port isolation and VSWR.

DrawCom's 50 Watt M-Series Power Divider/Combiners overcome these limits by employing higher power resistors mounted on a high thermal conductivity substrate having three times the heat transfer capability of ordinary circuit board materials which increases max input for combining non-coherent signals on adjacent ports. Eight models are available covering the frequency range from **0.800 - 2.200 GHz**. Choose from **2-way, 3-way, 4-way, 8-way and 16-way** configurations in N-Female and SMA-Female connector styles.

For higher power combining applications, check out the 80 & 100 watt H-Series Combiners & Dividers.

Source: www.e-meca.com