

# MI-546

## DIPLEXER 1800/2100

The Kaelus MI-546 is a bi-directional Diplexer, designed to combine or split 1800 and 2100 MHz bands. The MI-546 provides low insertion loss and high return loss with excellent passive inter-modulation performance in an extremely small and lightweight IP67 capable package

### FEATURES

- Enables antenna & coax sharing for 1800 and 2100 MHz bands systems
- Compact & lightweight - perfect for Small Cell applications
- Low insertion loss & high return loss
- Low passive IM performance
- Single twin and dual twin models available
- 7/16 (F) or 4.3-10 (F) connectors
- Hard Wired and DC Autosense versions available
- Provisions for wall or mast mounting



### TECHNICAL SPECIFICATIONS

| PORT NAME                | 1800                                                                                            | 2100                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Passband                 | 1710 - 1880 MHz                                                                                 | 1920 - 2170 MHz                                                                                |
| Insertion loss           | 1710-1785 MHz 0.15 dB typical, 0.2 dB maximum<br>1805-1880 MHz 0.15 dB typical, 0.35 dB maximum | 1920-1980 MHz 0.2 dB typical, 0.45 dB maximum<br>2110-2170 MHz 0.15 dB typical, 0.2 dB maximum |
| Return loss              | 20 dB typical, 18 dB minimum                                                                    |                                                                                                |
| Maximum input power      | 250 W (average)                                                                                 |                                                                                                |
| Intermodulation products | -160 dBc with 2 x 20 W carriers                                                                 |                                                                                                |
| Rejection                | 50 dB minimum in 2100 band                                                                      | 50 dB minimum in 1800 band                                                                     |

### ELECTRICAL

|           |             |
|-----------|-------------|
| Impedance | 50 $\Omega$ |
|-----------|-------------|

### DC / AISG

For hardwired versions, DC/AISG can be fully connected (DC all) or a specific connection can be ordered (DC custom). For DC autosense versions, the DC/AISG path is automatically selected. In bottom of the tower applications (combiner mode), each RF channel port is sequentially checked for the presence of DC voltage. If more than one port has voltage, the port that has the highest (programmed) priority is passed to the common port. If a short circuit is detected on the common port DC/AISG is disabled. In top-of-tower applications (splitter mode), DC/AISG is passed to all ports that do not present a short circuit. If a short circuit is detected, the shorted RF port will be disabled for DC/AISG while other RF ports remain connected.

|                     |                                |
|---------------------|--------------------------------|
| Insertion loss      | 1 dB max                       |
| Return loss         | 12 dB min                      |
| Input voltage range | 8 - 30 V DC max 0.3 W          |
| DC current rating   | 2 A continuous, Drop max 2.4 V |
| Compliance          | 3GPP TS 37.461                 |

### ENVIRONMENTAL

For further details of environmental compliance, please contact Kaelus.

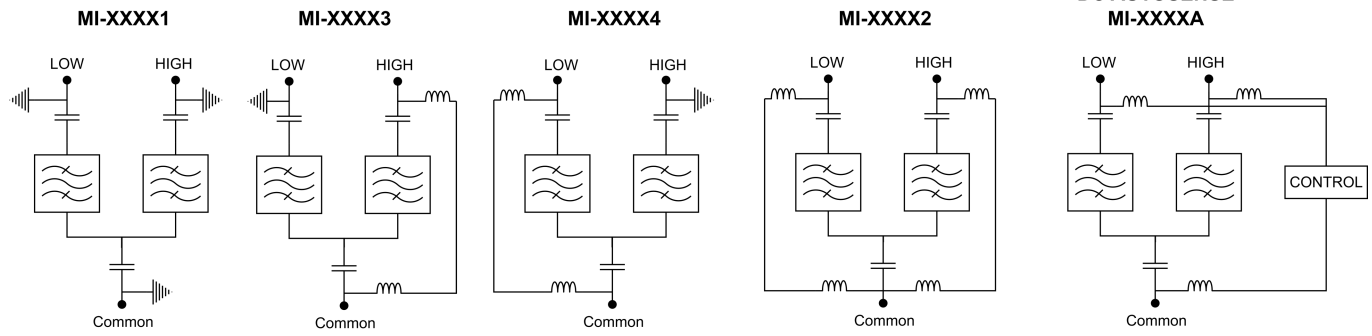
|                      |                                                             |
|----------------------|-------------------------------------------------------------|
| Temperature range    | -40 °C to +65 °C   -40 °F to +149 °F                        |
| Ingress protection   | IP67                                                        |
| Lightning protection | 10 kA maximum (8/20 us)                                     |
| MTBF                 | > 1,000,000 Hours                                           |
| Compliance           | ETS 300 019 1-4E (OPERATIONAL)<br>ETS 300 019 1-1 (STORAGE) |

| MECHANICAL           |                                                                                                          |                                                                                                         |
|----------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Feature              | Single Mount                                                                                             | Dual Mount                                                                                              |
| Dimensions H x D x W | 138 x 48.5 x 135 mm   5.43 x 1.91 x 5.31 in<br>With Auto-Sence 138 x 60 x 135 mm   5.91 x 2.36 x 5.31 in | 138 x 60 x 135 mm   5.43 x 2.36 x 5.31 in<br>With Auto-Sence 138 x 118 x 135 mm   5.43 x 4.64 x 5.31 in |
| Volume               | 0.9 l<br>1.1 l with auto-sense                                                                           | 1.7 l<br>2.2 l with auto-sense                                                                          |
| Weight               | 1.8 kg   3.97 lb gross / 2.1 kg   4.6 lb net                                                             | 3.5 kg   7.72 lb gross / 4.0 kg   8.82 lb net                                                           |
| Finish               | Painted, NCS 1502-R                                                                                      |                                                                                                         |
| Mounting             | Pole/wall bracket supplied with two metal clamps for 45-178 mm diameter poles                            |                                                                                                         |

## ORDERING INFORMATION

| PART NUMBER             | CONFIGURATION                       | OPTIONAL FEATURES | CONNECTORS | DC/AISG CONFIGURATION   |
|-------------------------|-------------------------------------|-------------------|------------|-------------------------|
| MI-5460n                | Single Mount                        | BASE MODEL        | 7/16 (F)   | Refer to DC /AISG table |
| MI-5461n                | Dual Mount                          | BASE MODEL        | 7/16 (F)   | Refer to DC /AISG table |
| MI-5463n                | Single Mount                        | BASE MODEL        | 4.3-10 (F) | Refer to DC /AISG table |
| MI-5464n                | Dual Mount                          | BASE MODEL        | 4.3-10 (F) | Refer to DC /AISG table |
| DC / AISG CONFIGURATION |                                     |                   |            |                         |
| MI-546NA                | Auto-sense                          |                   |            |                         |
| MI-546n1                | NO DC Path                          |                   |            |                         |
| MI-546n2                | DC to 1800 and 2100                 |                   |            |                         |
| MI-546n3                | DC to 2100                          |                   |            |                         |
| MI-546n4                | DC to 1800                          |                   |            |                         |
| Auto-sense Priority     |                                     |                   |            |                         |
| MI-546nA.1              | FPO to 1800 and 2100                |                   |            |                         |
| MI-546nA.2              | XOR to 1800 and 2100                |                   |            |                         |
| MI-546nA.3              | 2100 Priority 1 and 1800 Priority 2 |                   |            |                         |
| MI-546nA.4              | 1800 Priority 1 and 2100 Priority 2 |                   |            |                         |

## ELECTRICAL BLOCK DIAGRAM



## MECHANICAL BLOCK DIAGRAM

