

# MI-146

## TMA TWIN 800/900 MHZ

Designed to be deployed in collocated 800 and 900 systems, the Kaelus MI-146 enhances cell uplink coverage in 800 and 900 through improved system noise figure, thereby saving operational and capital expenditure.

### FEATURES

- Improved base station sensitivity through gain in the 800, 900 uplink
- Excellent noise figure performance
- Full AISG operation and RET antenna support, AISG2.0 compatible
- Small and light for minimum visual impact



### TECHNICAL SPECIFICATIONS

| BAND NAME                                                                                                                                                                               | 800                                | 900             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------|
| DOWNLINK                                                                                                                                                                                |                                    |                 |
| Passband                                                                                                                                                                                | 791 - 821MHz                       | 925 - 960MHz    |
| Insertion loss                                                                                                                                                                          | 0.5dB typical                      | 0.5dB typical   |
| Return loss                                                                                                                                                                             | 18dB minimum                       |                 |
| Maximum input power                                                                                                                                                                     | 200W (average)*                    | 200W (average)* |
| Intermodulation products                                                                                                                                                                | -160dBc in RX band at ANT          |                 |
| UPLINK                                                                                                                                                                                  |                                    |                 |
| Passband                                                                                                                                                                                | 832 - 862MHz                       | 880 - 915MHz    |
| Gain                                                                                                                                                                                    | 12dB                               |                 |
| Return loss                                                                                                                                                                             | 16dB minimum                       |                 |
| Bypass return loss                                                                                                                                                                      | 12dB minimum                       |                 |
| Bypass loss                                                                                                                                                                             | 2.4dB typical                      |                 |
| Noise figure                                                                                                                                                                            | 1.4dB typical                      |                 |
| Output IP3                                                                                                                                                                              | 25dBm typical                      |                 |
| ELECTRICAL                                                                                                                                                                              |                                    |                 |
| Impedance                                                                                                                                                                               | 50Ohms                             |                 |
| AISG MODE OF OPERATION (AUTO SELECTED ON VALID AISG 2.0 FRAMES)                                                                                                                         |                                    |                 |
| AISG signals can be applied to the BTS ports. The TMA unit switches to AISG mode when valid frames are detected on either port. Each LNA is controlled uniquely by its sub-unit number. |                                    |                 |
| DC supply voltage                                                                                                                                                                       | 24 V DC nominal (+9.0V to +31V DC) |                 |
| AISG version                                                                                                                                                                            | 2.0                                |                 |
| Power consumption, AISG mode                                                                                                                                                            | < 4W                               |                 |
| AISG connector, current rating                                                                                                                                                          | IEC60130-9, 8-pin female, 1.6A     |                 |

| 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                                                    | IEC61312-1, RF: ±5kA (8/20us), AISG: ±2.5kA (8/20us)                                                                        |
| MTBF                                                                    | >1,000,000 hours                                                                                                            |
| Compliance                                                              | EMC: EN 301 489-23<br>Safety: EN 62368-1<br>Operation: ETSI EN 300 019-1-4 class 4.1E<br>Storage: ETS 300 019-1-1 class 1.2 |

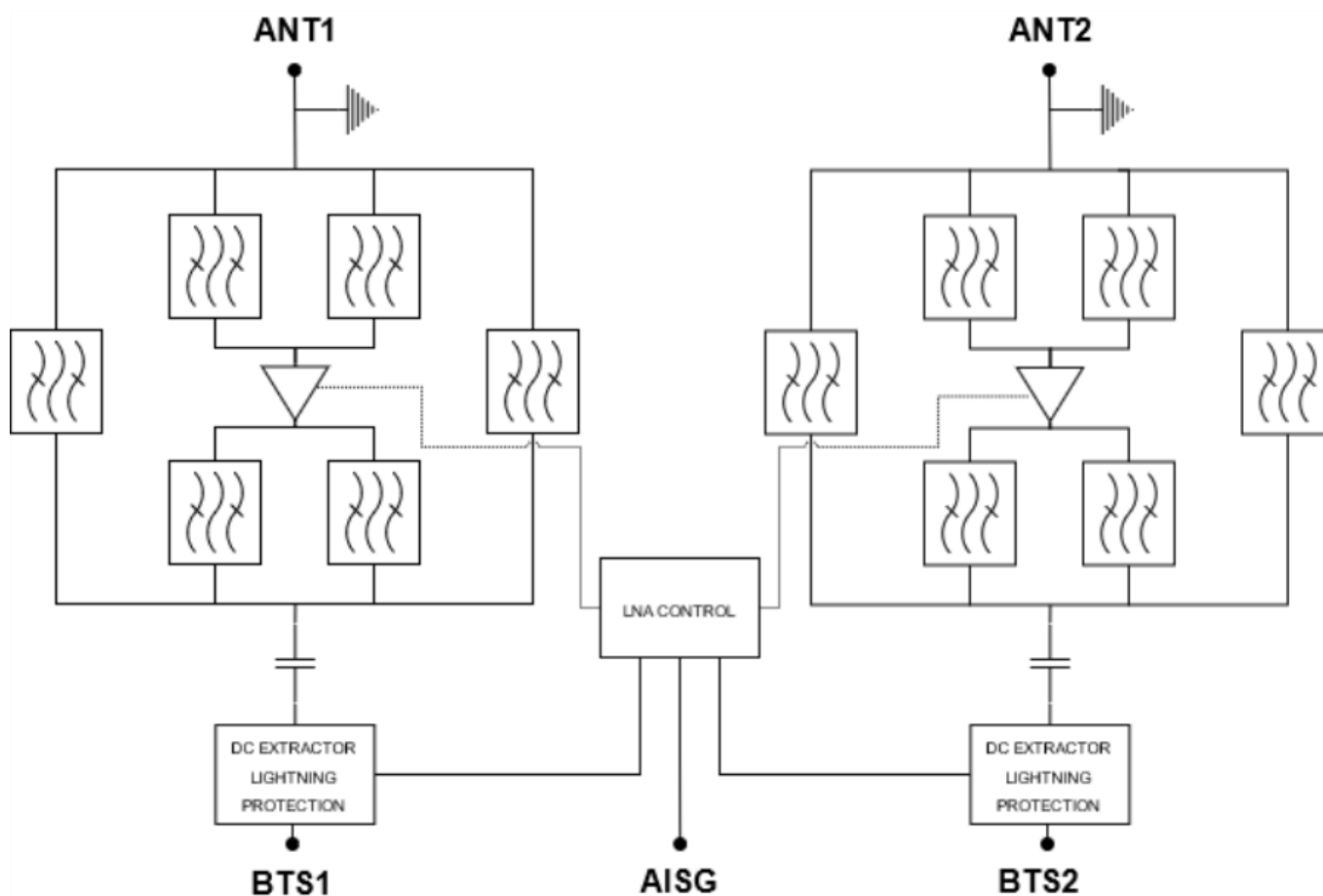
| MECHANICAL           |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
| Dimensions H x D x W | 246 x 159 x 231 mm   9.6 x 6.3 x 9.06in (excluding brackets and connectors) |
| Weight               | 9.0kg   19.84lbs                                                            |
| Finish               | Powder coated, NCS 1502-R                                                   |
| Connectors           | See ordering informations                                                   |
| Mounting             | Pole/wall bracket using two metal clamps, suits 40-140mm diameter poles     |

| SHIPPING INFORMATION               |                                            |
|------------------------------------|--------------------------------------------|
| Carton size                        | 390 x 290 x 230mm   15.35 x 11.41 x 9.06in |
| Gross weight (including packaging) | 9.8kg   21.61lb                            |
| Carton Qty / Pallet                | 32                                         |

## ORDERING INFORMATION

| PART NUMBER                                                              | CONFIGURATION      | OPTIONAL FEATURES | CONNECTORS           | AISG MODE                  |
|--------------------------------------------------------------------------|--------------------|-------------------|----------------------|----------------------------|
| MI-14601                                                                 | TWIN, 2 in / 2 out | BASE MODEL        | 7/16 (F)<br>1xAISG   | COMMON MODE<br>ONETWO (*)  |
| MI-14602                                                                 | TWIN, 2 in / 2 out | BASE MODEL        | 7/16 (F)<br>1xAISG   | COMMON MODE<br>TWOTWO (**) |
| MI-14606                                                                 | TWIN, 2 in / 2 out | BASE MODEL        | 7/16 (F)<br>2xAISG   | INDEPENDENT                |
| MI-14631                                                                 | TWIN, 2 in / 2 out | BASE MODEL        | 4.3-10 (F)<br>1xAISG | COMMON MODE<br>ONETWO (*)  |
| MI-14632                                                                 | TWIN, 2 in / 2 out | BASE MODEL        | 4.3-10 (F)<br>1xAISG | COMMON MODE<br>TWOTWO (**) |
| MI-14636                                                                 | TWIN, 2 in / 2 out | BASE MODEL        | 4.3-10 (F)<br>2xAISG | INDEPENDENT                |
| (*) ONETWO: the TMA is identified as 1 logic unit with 2 subunits        |                    |                   |                      |                            |
| (**) TWOTWO: the TMA is identified as 2 logic units with 2 subunits each |                    |                   |                      |                            |

## ELECTRICAL BLOCK DIAGRAM



## MECHANICAL BLOCK DIAGRAM

