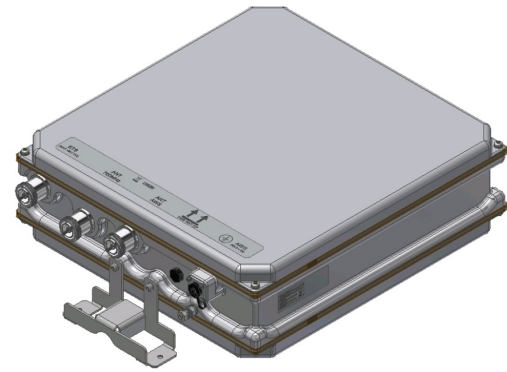


# TMA2042F02V1-1D

## TMA 700/AWS

Designed to be used at co-located 700MHz and AWS sites, the Kaelus TMA2042 provides internal diplexing of the two bands. Costly external diplexers and feeders are no longer required, resulting in decreased hardware costs, environmental impact and tower licensing fees.



### FEATURES

- LTE ready
- AISG 2.0 compatible, fully software upgradable
- Improved base station sensitivity through gain in both the 700 MHz and AWS uplink bands
- Excellent noise figure performance
- Full lightning protection and fail safe bypass mode

### TECHNICAL SPECIFICATIONS

| BAND NAME                          | 700MHZ   | AWS  |
|------------------------------------|--|--|
| <b>DOWNLINK</b>                    |  |  |
| Passband                           | 728 - 746MHz   | 2110 - 2180MHz   |
| Insertion loss                     | 0.4dB maximum, 0.3dB typical                                 | 0.4dB maximum, 0.25dB typical                                  |
| Return loss                        | 18dB minimum   |  |
| Maximum input power                | 500W (average) / 5kW (PEP)                                   |  |
| <b>UPLINK</b>                      |  |  |
| Passband                           | 698 - 716MHz nominal<br>699.25 - 714.75MHz guaranteed        | 1710 - 1780MHz   |
| Gain                               | 12dB minimum   |  |
| Return loss                        | 18dB minimum   |  |
| Bypass return loss                 | 14dB minimum   |  |
| Bypass loss                        | 3dB maximum over temperature range<br>1.5dB typical mid band | 2.5dB maximum over temperature range<br>2dB typical            |
| Noise figure                       | 2.2dB maximum<br>1.3dB typical mid band                      | 1.4dB maximum over temperature range<br>1.1dB typical mid band |
| Output IP3                         | +22dBm minimum, +26dBm typical                               |  |
| Maximum input power with no damage | +12dBm   |  |
| <b>UPLINK REJECTION</b>            |  |  |
| Rejection in TX band               | 80dB minimum   |  |
| Rejection @ 1700MHz                | 75dBc minimum  | 25dBc minimum  |
| Rejection @ 1800MHz                | 75dBc minimum  | 20dBc minimum  |
| Rejection @ 716.2MHz               | 40dBc minimum  | 80dBc minimum  |
| Rejection @ 697.8MHz               | 40dBc minimum  | 80dBc minimum  |
| <b>ELECTRICAL</b>                  |  |  |
| Impedance                          | 50 Ohms  |  |
| Intermodulation products           | -155dBc maximum at antenna port with 2 x 20W carriers        |  |

| GENERAL SPECIFICATIONS, MEASURED OVER 180KHZ WITHIN THE PASS BAND |  |
|---|--|
| Phase linearity variation, 700MHz band                            | 2° maximum, 0.7° typical Uplink<br>0.2° typical Downlink               |
| Phase linearity variation, AWS band                               | 1° maximum, 0.2° typical Uplink<br>0.2° typical Downlink               |
| Group delay variation, 700MHz band                                | 70ns maximum, 50ns typical Uplink<br>5ns maximum, 1ns typical Downlink |
| Group delay variation, AWS band                                   | 5ns maximum, 0.8ns typical   |
| Amplitude variation, 700MHz band                                  | 0.35dB maximum, 0.2dB typical  |
| Amplitude variation, AWS band                                     | 0.2dB maximum, 0.01dB typical  |

| POWER SUPPLY AND ALARM (CURRENT WINDOW ALARM MODE, DEFAULT)   |                                     |
|---|-------------------------------------|
| CWA mode is the default TMA operating mode. The BTS port sinks additional current to indicate an alarm state. |                                     |
| DC supply voltage   | +7.5V to +30V DC, case is DC ground |
| DC supply   | Through BTS connector               |
| DC supply current, normal mode  | 200 ± 20mA                          |
| DC supply current, alarm mode   | 300 ± 30mA                          |

| POWER CONSUMPTION |                                 |
|-------------------|---------------------------------|
| Normal operation  | 1.5W @ 7.5V, 6.0W @ 30V typical |
| Alarm mode        | 4.5W @ 15V typical              |

| AISG MODE OF OPERATION (AUTO SELECTED ON VALID AISG 2.0 FRAMES)  |   |
|--|---|
| AISG signals can be applied to either BTS port. The TMA switches to AISG mode when valid frames are detected on one of the ports. The TMA unit is DC powered only from the BTS port supplying the AISG frames. |   |
| AISG version   | 2.0 (1.1 optional)  |
| Supply current, AISG mode  | 200mA @ 7.5V, 65mA @ 30V typical                          |
| Voltage drop, BTS to AISG port   | 0.2V maximum at 2A  |
| Power consumption, AISG mode   | 1.5W @ 7.5V, 2W @ 30V typical                             |
| AISG connector, current rating   | IEC60130-9, 8-pin female, < 4A peak, 2A continuous, pin 6 |

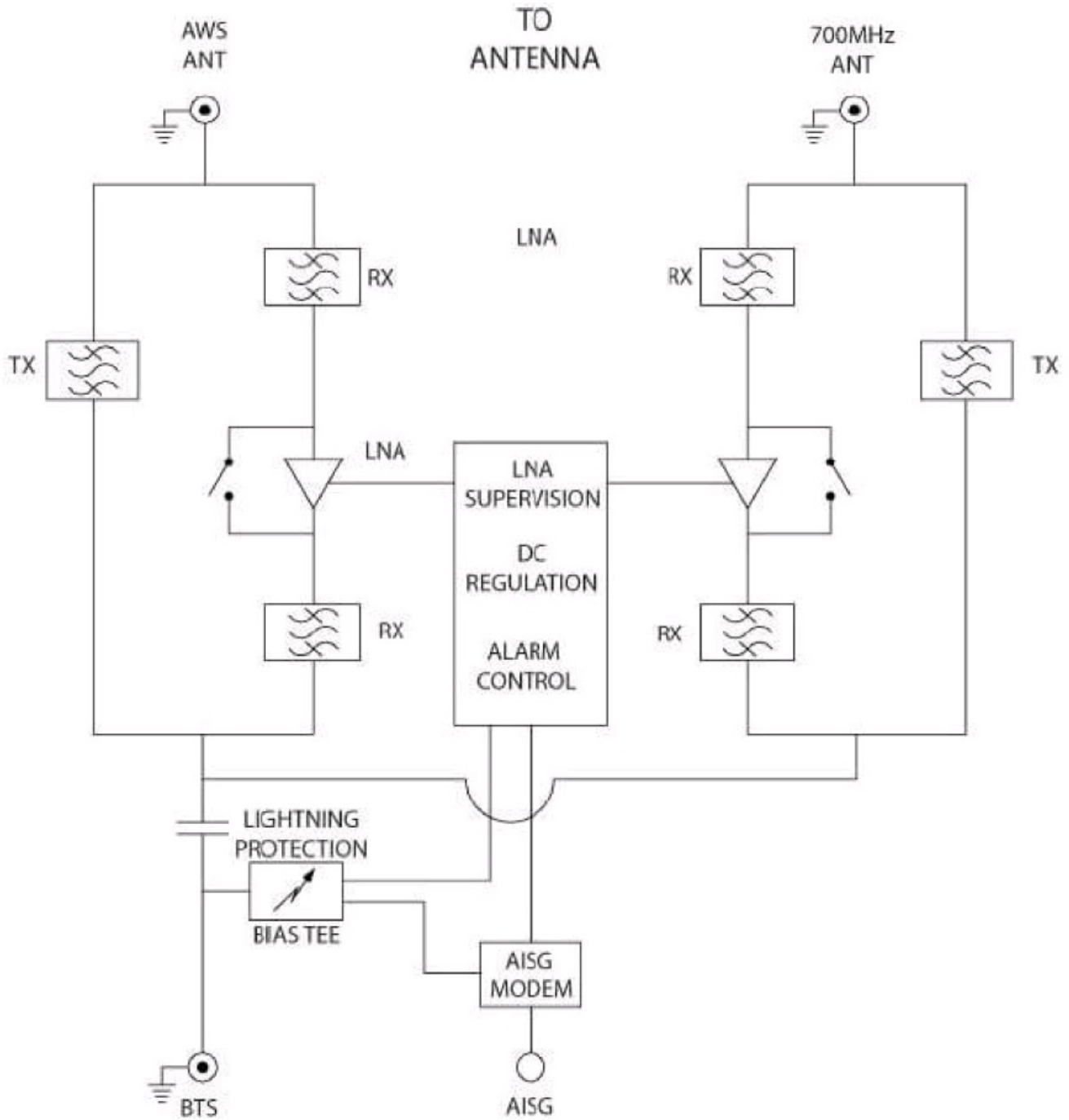
| ENVIRONMENTAL   |  |
|---|--|
| For further details of environmental compliance, please contact Kaelus. |  |
| Temperature range   | -40° to +65°C   -40° to +149°F                                     |
| Ingress protection  | IP67   |
| Lightning protection  | IEC61312-1, RF: ±5kA maximum (8/20us), AISG: ±2kA maximum (8/20us) |
| MTBF  | >700,000 (hours)   |
| Compliance  | FCC part 15, ETSI EN 300 019 class 4.1, RoHS                       |

| MECHANICAL           |  |
|----------------------|--|
| Dimensions H x D x W | 405 x 385 x 128mm   15.94 x 15.16x 5.04in                                |
| Weight               | 15kg   33lbs   |
| Finish               | Painted, light grey (RAL7035)  |
| Connectors           | DIN 7-16 (F) x 3 long neck   |
| Mounting             | Pole/wall bracket supplied with two metal clamps 45-178mm diameter poles |

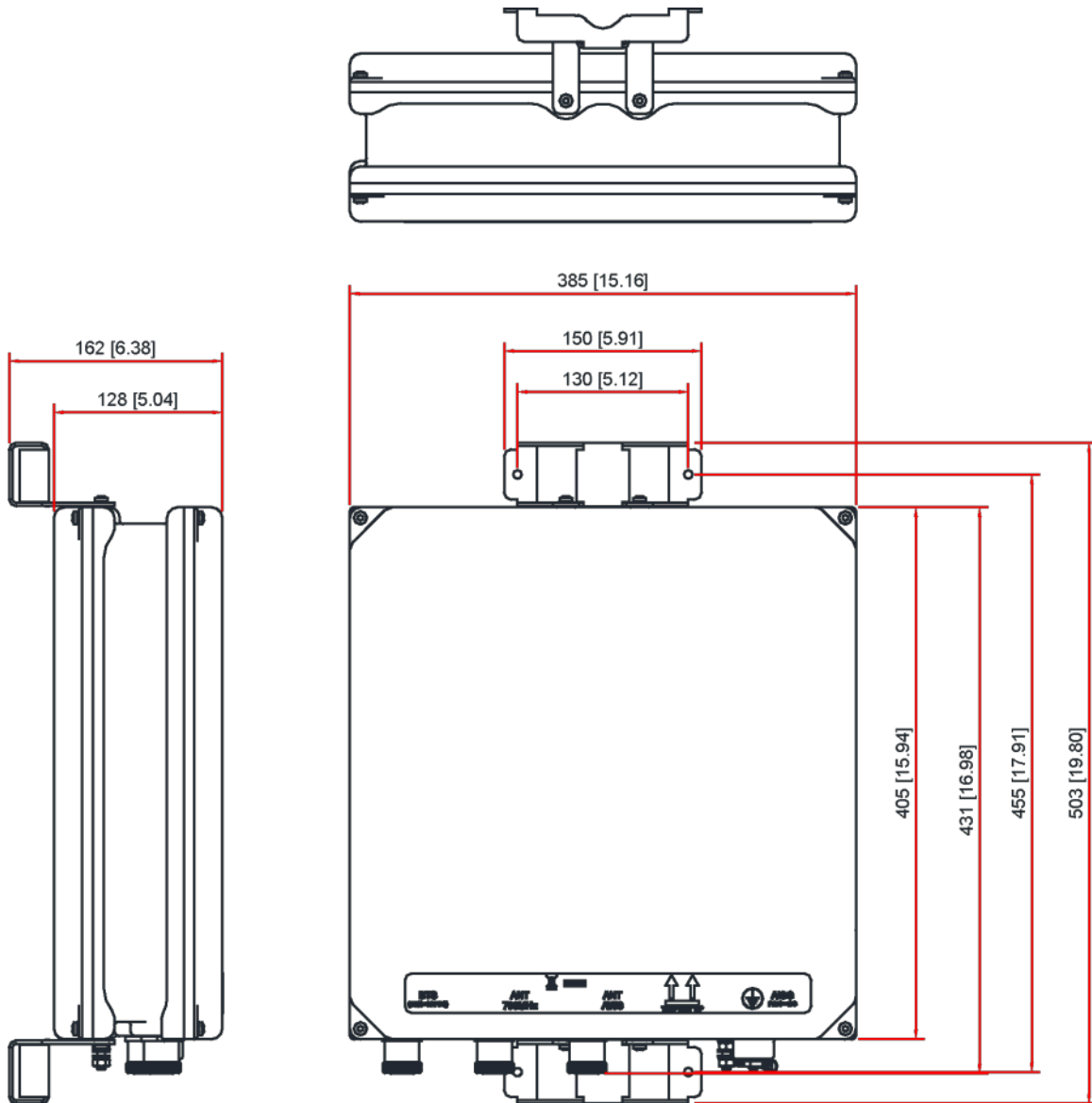
## ORDERING INFORMATION

| PART NUMBER     | DESCRIPTION   |
|-----------------|---|
| TMA2042F02V1-1D | Dual Band 700/AWS single TMA, single mounting bracket, configured with AT&T personality |

ELECTRICAL BLOCK DIAGRAM



**MECHANICAL BLOCK DIAGRAM**



THIRD ANGLE PROJECTION

mm(INCH)

