

## TTA-UM020Z\*

### UMTS 2100 | Twin TMA | Dual Duplex | 60 MHz BW

- Comprises two internal duplexers for 900 bypass path and one dual TMA (UMTS FDD) in a single package
- Lowest Noise Figure on the market
- Full 60 MHz uplink (Rx) bandwidth
- Useable in any orientation
- AISG and current dump compatible (AISG 2.0 upgradeable)
- AISG connector for external RET antenna control by coaxial feeder
- Hardware and softwareconfigurable using AISG "personality" upload.

\* Model number options: Z indicates different configurations (see next page).

Variant: TTA-UM120Z is described on next page.

| RF Characteristics   |   |
|--|---|
| <b>Downlink (TX) Path</b>  |   |
| Frequency band   | 2110 -2170 MHz  |
| Insertion Loss   | 0.4 dB max / 0.2 dB max across pass band              |
| Return Loss, all ports   | 18 dB min (VSWR <1.3)                                 |
| TX Filter rejection in RX band   | 50 dB min   |
| Rejection @  |   |
| 920-960 MHz  | >75 dBc   |
| 1805-1880 MHz  | >65 dBc   |
| 2010-2025 MHz  | >25 dBc   |
| 2400-2700 MHz  | >65 dBc   |
| 2700-2900 MHz  | >75 dBc   |
| Group delay variation per 5 MHz  | 5 ns max  |
| Continuous Average Power   | 100 W max   |
| Peak Envelope Power  | 1000 W max (at sea level)                             |
| Intermodulation<br>(2x 43 dBm Tx Carriers at BTS port)   | -120 dBm max. in Rx band, BTS port                    |
| <b>Uplink (RX) Path (LNA Mode)</b>   |   |
| Frequency Band   | 1920 - 1980 MHz                                       |
| Gain   | 12 ± 1 dB   |
| Gain variation over frequency  | ± 0.3 dB max  |
| Noise Figure   | 1.1 dB typ., 1.4 dB max at 25°C<br>1.6 dB max at 60°C |
| Return Loss, normal mode, all ports  | 18 dB min (VSWR <1.3)                                 |
| Rejection in RX input filter @   |   |
| 2110-2170 MHz  | >65 dBc   |
| Rejection @  |   |
| 920-960 MHz  | >75 dBc   |
| 1805-1880 MHz  | >65 dBc   |
| 2010-2025 MHz  | >25 dBc   |
| 2400-2700 MHz  | >65 dBc   |
| 2700-2900 MHz  | >75 dBc   |
| Group delay variation per 5 MHz  | 10 ns max.  |
| Output Intercept Point   | + 18 dBm min  |
| Maximum Input Power with no damage   | + 12 dBm  |
| <b>Uplink (RX) Path (Bypass Mode) Bypass is the default mode for each channel when not powered</b> |   |
| Insertion Loss, Bypass Mode  | 3.5 dB max  |
| Return Loss, Bypass Mode, all ports  | 14 dB min   |
| <b>800 / 900 Bypass paths</b>  |   |
| Frequency Band   | 800-960 MHz   |
| Insertion Loss   | 0.3 dB max  |
| Return Loss, all ports   | 18 dB min (VSWR <1.3)                                 |
| Attenuation in<br>1920-1980/2110-2170 MHz  | 45 dB min   |
| Continuous Average Power   | 100 W max   |
| Peak Envelope Power  | 500 W max (at sea level)                              |
| Intermodulation<br>(2x 43 dBm Tx Carriers at BTS port)   | -155 dB max. in Rx band, BTS port                     |
| <b>DC Power Supply, Alarm currents &amp; AISG Control</b>  |   |
| DC Supply Voltage via BTS-RF cable   | +9 to +30 V DC  |



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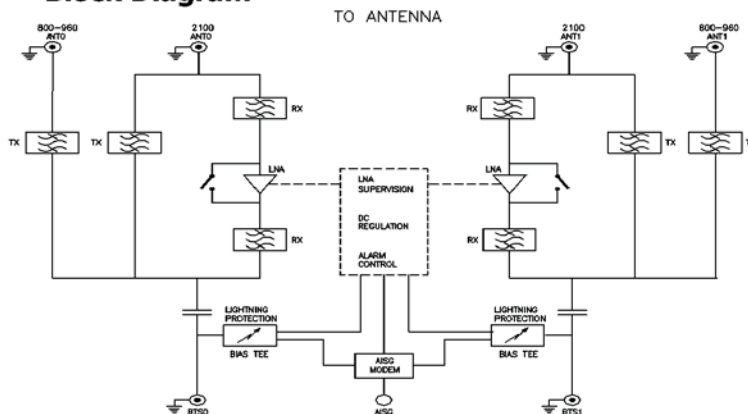
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| AISG mode (auto-selected on valid packets)   |  |  |
|--|--|--|
| AISG signals can be applied to either BTS0 or BTS1 port. The TMA unit switches to AISG mode when valid frames are detected on one of the BTS ports. The TMA unit is DC powered (common feed for both channels) only from the port supplying AISG frames. |  |  |
| AISG Version   | 1.1  |  |
| DC supply current, total   | 80 mA at 30V, 175 mA at 9V typical   |  |
| AISG connector current rating  | < 4A peak, 2 Amp continuous, pin 6   |  |
| Current window alarm backup  | Yes  |  |
| Field Firmware upgradeable   | Yes  |  |
| CurrentAlarm mode (default mode) Z suffix in model number indicates the program values. See table below.   |  |  |
| The TMA is configured so that each BTS port is individually powered and monitored. Each BTS port sinks additional current to indicate an alarm state.  |  |  |
| DC supply current port BTS0 and BTS1, operating  | 100 mA typ. (two ports powered)  |  |
| DC supply current, alarm mode per port   | 150-300 mA (programmable)  |  |
| Environmental  |  |  |
| Maximum Operating Temperature Range  | -40 to +60 °C  | -40 to +140 °F   |
| Environmental  | ETS 300 019  |  |
| Environmental Sealing  | IP67 (EN 60529)  |  |
| Safety   | EN 60950   |  |
| Lightening Protection  | 3kA, 10/350 us pulse (IEC61312)  |  |
| MTBF   | >700,000 hours   |  |
| EMC  | 3GPP TS 25.113   |  |
| Mechanical   |  |  |
| Dimensions (excluding connectors and mounting bracket)   | 169 (W) x 278 (H) x 79 (D) mm<br>see diagram next page   | 6.7 (W) x 10.9 (H) x 3.1 (D) in                            |
| Weight   | 7.7 kg est   | 17.0 lbs   |
| Finish   | Painted, light grey (RAL7035)  |  |
| Connectors   | 6 x 7/16 - EDIN Female   |  |
| Mounting   | Pole / Wall, any orientation.<br>Supplied with two metal clamps for 45-178 mm (1.8-7.0 in) diameter poles. |  |
| Model Number Options (Z in model number specifies the node-B type for Current Alarm purposes)  |  |  |
| Value for Z :-   | A<br>K<br>H  | Alcatel-Lucent/Nortel<br>Nokia (WMHB compatible)<br>Huawei |
| Variants   |  |  |
| TTA-UM120Z   | No bracket. One AISG connector at bottom. Mounting by holes on the sides.                                  |  |



### Block Diagram

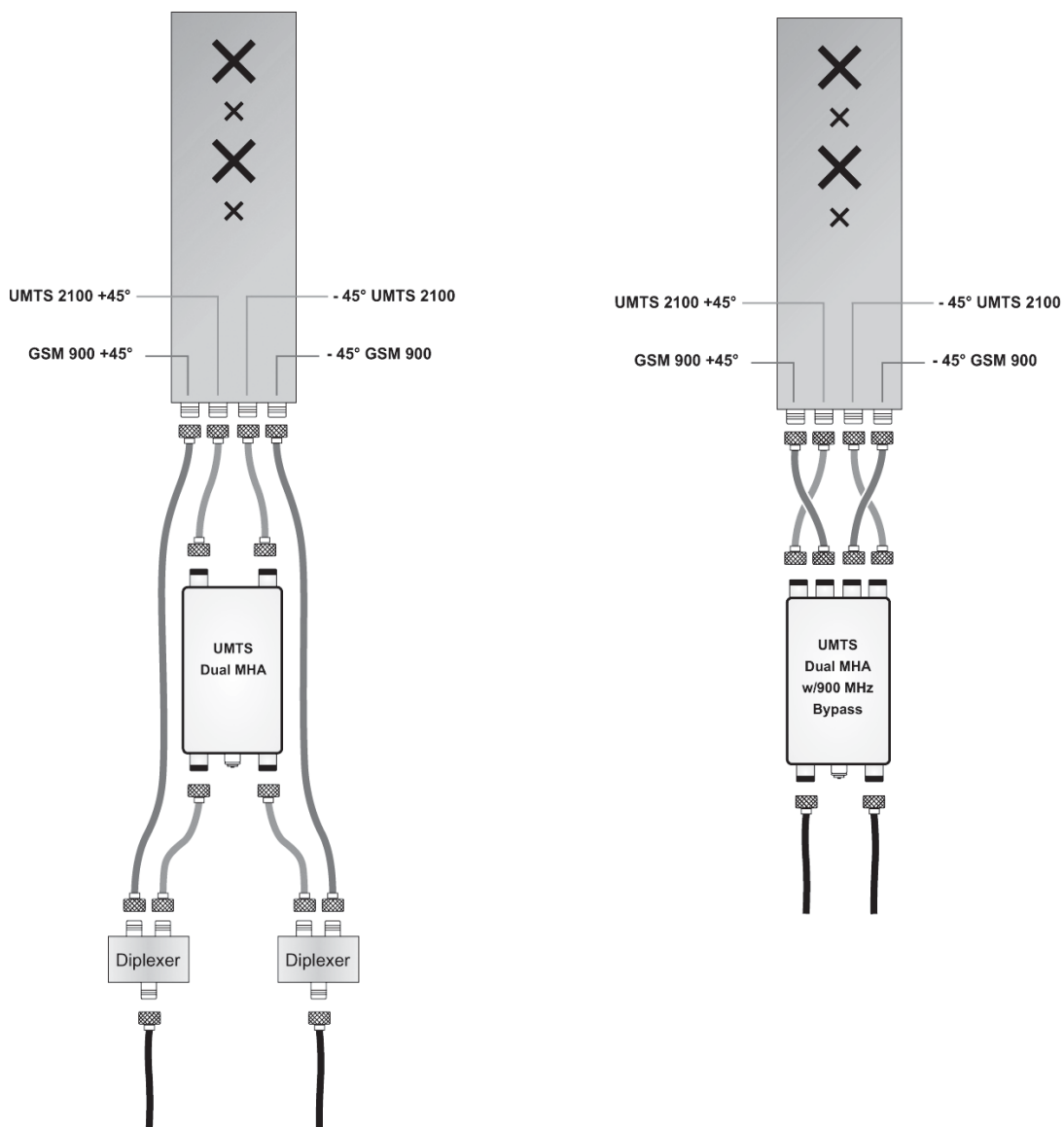


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| Stand-alone Antenna XXP Dualband used for GSM900 / UMTS2100 with feeder sharing |  |
|---|--|
| 'classic' dual TMA deployment   | with Amphenol 'diplexer TMA'           |
| cable clutter on site   | aesthetic layout, less cabling         |
| risk for error is high  | straight forward connections           |
| mast space consuming  | same size as traditional TMA           |
| high insertion losses   | eliminating insertion losses           |
| expensive due to many devices   | cost savings (TCO <sup>1</sup> : -25%) |



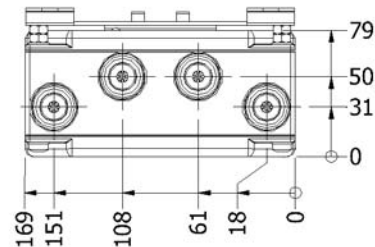
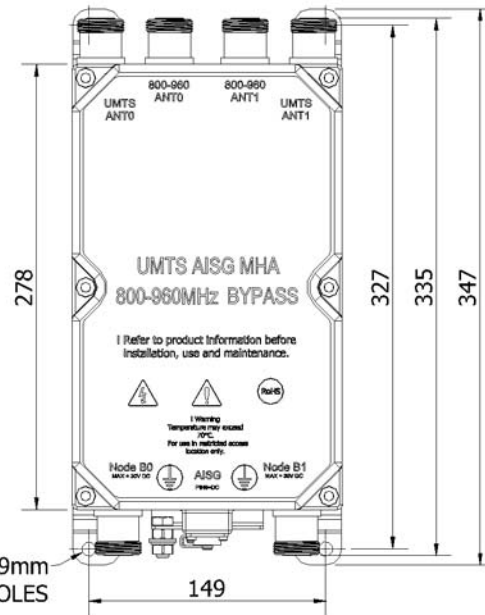
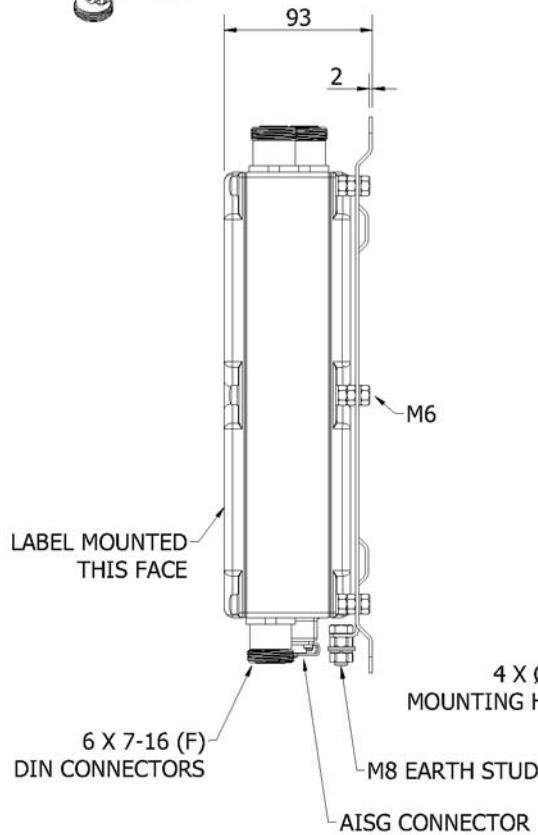
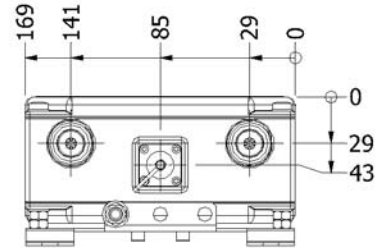
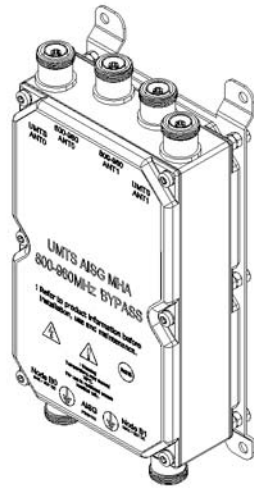
<sup>1</sup> TCO = Total Cost of Ownership

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Mechanical



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