



# TB3 TETRA Base Station

## The ultimate coverage engine

Reliable coverage is paramount in a professional communications network. Better network coverage brings better public services. Providing network coverage everywhere, all the time, for the small numbers of officers that are typically using a TETRA network is certainly a tall order.

But this is just what the Airbus Defence and Space TB3 TETRA base station was designed to achieve. The TB3 can improve quality of service, provide more coverage, or achieve a combination of the two.

### Variety of topologies

The TB3 can be used in a variety of network topologies to implement the best network availability and security.

As well as coverage, the TB3 also helps deal with that other major headache

– operating costs. For example, remote operation and maintenance greatly reduces these costs and is an important area pioneered by Airbus Defence and Space TETRA System.

# TB3 TETRA Base Station

## Superior and versatile coverage solutions

### Technical specifications

- Frequency bands
  - Tx: 335 -355MHz and Rx: 340 – 360MHz
  - Rx: 350 -356MHz and Tx: 360 – 366MHz
  - Rx: 380 – 390MHz and Tx: 390 – 400MHz
  - Rx: 410 – 420MHz and Tx: 420 – 430MHz
  - Rx: 450 – 460MHz and Tx: 460 – 470MHz
  - Rx: 806 - 824MHz and Tx: 851 – 869MHz
- Max. TBS power at top of cabinet
  - 25W
  - 40W (with combiner by-pass configuration and duplexer)
- Max power at TTRX output: 65W
- Guaranteed dynamic sensitivity at top of cabinet: < -112dBm (TCH 7.2, BER 4%, TU50) without diversity
- Guaranteed static sensitivity at top of cabinets: < -119dBm (TCH 7.2, BER 4%) without diversity
- Receiver class:  
Class A and B EN 300 392-2
- Diversity reception: Maximum ratio combining (MRC) improving the uplink budget by 3...8dB compared to single receiver antenna solutions
- Number of receivers per radio:  
6 receivers with MRC for e.g. three-sector X-pol panel antennas
- Sectorized reception: Three sector topology improves receiver C/I by 5dB compared to omnidirectional solution
- Duplex spacing:  
10MHz (45MHz @ 800MHz band)
- Switching range:  
< 5MHz (18MHz @ 800MHz)
- Carrier spacing: 25kHz
- Combiner options: Auto-tuned cavity. Manually tuned cavity. Wideband hybrid combiner with duplexers. Combiner by-pass with duplexer.
- Supply voltage options:
  - 230VAC (184VAC...276VAC)
  - 48VDC (-36VDC...-60VDC)

- Power consumption:
- Nominal 0.3kW with one TTRX at 65W/100% duty cycle
  - Nominal 1kW with four TTRX at 65W/100% duty cycle
  - Power consumption varies according to the traffic volume
  - Width x Height x Depth:  
60 x 162 x 53cm, one cabinet
  - Weight (max., fully equipped)
    - 200kg (1 cabinet, 4 TTRX)
    - 380kg (2 cabinets, 8 TTRX)
  - Operating ambient temperature:  
-10° C ... + 55° C
  - TBS transmit mode: Downlink continuous (D-CT) (as specified in the TETRA standard). Only carriers that are needed to carry the traffic are keyed.



### Transmission:

- Native IP
- Four E1 interfaces with inbuilt multiplexer and loop protection
- Support for satellite transmission
- O&M functions
  - Remote and local configuration. Remote and local alarm handling.
  - Remote and local SW downloading
  - Remote and local test services. Eight remote outputs.

### Additional base station features

- Superior and versatile coverage solutions
- Intelligent Radio Resource Management
- Enhanced fallback
- Standalone mode
- Automatic Main Control Channel change-over
- Air to Ground cell range up to 83km
- Modular design for redundant base station main units
- Jamming detection
- Dynamic air encryption with two simultaneous encryption algorithms
- Adaptive random access window for congestion control
- Additional signaling channel for Automatic Vehicle Location use
- Load directed roaming
- Dynamic channel allocation between voice or packet data
- Optional Global Positioning System (GPS)
- TETRA Enhanced Data Service (TEDS)
- Secondary Control Channel
- Dual Homing

For more information please contact

Airbus Defence and Space / Hiomotie 32 / 00380 Helsinki/ Finland / T: +358 10 4080 000 /  
e-mail: marketing@securelandcommunications.com

Airbus Defence and Space / Wörthstraße 85 / 89077 Ulm / Germany / T: +49 (0) 731.392-0 /

Airbus Defence and Space / MetaPole / 1, bld Jean Moulin / CS 40001 / 78996 Elancourt Cedex / France / T: +33 (0)1 61 38 50 00