



# 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 TB3 TETRA base from Airbus 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 TETRA System.

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# 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

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