



ACCESSNET<sup>®</sup>-T IP

TETRA iBS

# TETRA integrated Base Station Technical Data

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# 1 Product description

The TETRA integrated Base Station (iBS) is a base station suitable for outdoor and indoor operation. Due to its small size, the TETRA iBS is easily transported, flexibly mounted, and quickly deployed, which reduces the networking cost. The TETRA iBS can be mounted on walls and the top of antenna masts. In temporary networking scenarios, the TETRA iBS can be deployed to build emergent radio coverage, offering abundant solutions to command and dispatch.

With the advanced multi-carrier technology, each TETRA iBS unit offers 2 paths, and each path provides 2 carriers. Up to 4 carriers are supported, offering the TETRA iBS a maximum of 16 radio channels to the radio subscribers that can be used simultaneously.

The TETRA iBS supports triple diversity for optimal reception with the highest sensitivity. This optimizes the radio characteristic of the base stations and reduces the number of base stations that are required for the coverage of a certain area. The TETRA iBS can be integrated in ACCESSNET-T IP seamlessly, be combined with DIB-R5 indoor, DIB-R5 outdoor base stations or used as a coverage extension for existing TETRA systems.

The TETRA iBS can support centralized switching only, without local gateways.



*Figure 1: TETRA iBS*

For external synchronization, the TETRA iBS supports satellite-based synchronization, e.g. GPS (in general Global Navigation Satellite System, GNSS).

## 2 Technical data

Table 1: General performance data

Transceiver frequency range		<ul style="list-style-type: none"> <li>■ TX: 390–430 MHz</li> <li>■ RX: 380–420 MHz</li> </ul>
Transmitting power (antenna socket)		<ul style="list-style-type: none"> <li>■ 46 dBm (40 W) @ 1 carrier per path with <math>\pi/4</math>-DQPSK modulation</li> <li>■ 43 dBm (20 W) @ 2 carriers per path with <math>\pi/4</math>-DQPSK modulation</li> </ul>
Max. number of carriers		4 carriers
Modulation bandwidth		25 KHz
Frequency step		6.25 KHz
Carrier spacing		<p>≥ 50 KHz</p> <p>(The carrier spacing between two carriers on one path cannot be 5 MHz/2.5 MHz.)</p>
Reception		No, dual, triple, or quad diversity
Sensitivity	Static	Typical: –120 dBm (BER 4 %)
	Dynamic	<ul style="list-style-type: none"> <li>■ Guaranteed: <ul style="list-style-type: none"> <li>– –112 dBm (TU 50 [TCH 7.2, BER 4 %])</li> </ul> </li> <li>■ Typical: <ul style="list-style-type: none"> <li>– –114 dBm (TU 50 [TCH 7.2, BER 4 %])</li> <li>– –85 dBm (TU 50 [TCH 7.2, BER 0.4 %])</li> <li>– –106 dBm (TU 50 [TCH 7.2, BER 2.2 %])</li> <li>– –106 dBm (HT200 [TCH 7.2, BER 4 %])</li> </ul> </li> </ul>
Synchronization		GPS
Connection to the transport network		2*ETH (100 Mbps or 1000 Mbps)
Power supply		–48 V <sub>DC</sub> (maximum voltage range: –38.4 to –60 V <sub>DC</sub> )
Mounting options		<ul style="list-style-type: none"> <li>■ Mast</li> <li>■ Wall</li> </ul>

Table 2: Dimensions and weights of the product (per unit)

Width	435 mm (17.13 in)
Height	157.5 mm (6.20 in)
Depth	340 mm (13.39 in)
Weight	≤ 26.5 kg (58.42 lbs)
Volume	24 L

Table 3: General interfaces (per unit)

RF interfaces	Number	<ul style="list-style-type: none"> <li>■ Rx/Tx: 2</li> <li>■ Rx diversity: 2</li> </ul>
	Connection	N socket
GNSS antenna connection	Number	1
	Specification	50 $\Omega$ antenna input with 5 V <sub>DC</sub> output for active antenna
	Connection	N socket
Ethernet ports	Number	2
	Specification	Ethernet, 100/1000 BaseT
	Connection	RJ45
Power supply connector	Structure	-48 V <sub>DC</sub>
	Number	1
	Connection	12 AWG (at DC port)

Table 4: Standards and Conformity

Conformity		Standard
CE/RED	Safety	<ul style="list-style-type: none"> <li>■ EN 62368-1</li> <li>■ EN 60950-22</li> </ul>
	EMC, Health	<ul style="list-style-type: none"> <li>■ EN 301489-1</li> <li>■ EN 301489-5</li> <li>■ EN 301489-19</li> <li>■ EN 50385</li> </ul>
	RF	<ul style="list-style-type: none"> <li>■ EN 300394</li> <li>■ EN 300392</li> <li>■ EN 303413</li> <li>■ EN 302561</li> <li>■ EN 303039</li> </ul>

Table 5: Power consumption

Typical power consumption	< 400 W @ 40 W Tx ToC
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Table 6: Environmental conditions

Operation	Temperature range	-40°C to +60°C (-40°F to +140°F) (derating)
	Relative humidity	5 % to 95 %
	Degree of protection	IP66
	Altitude range	-400 m to 3000 m (-1312.34 ft to 9842.52 ft)
	Atmospheric pressure range	70-106 kPa
Transport temperature range	-40°C to +85°C (-40°F to +185°F)	
Storage temperature range	-40°C to +85°C (-40°F to +185°F)	