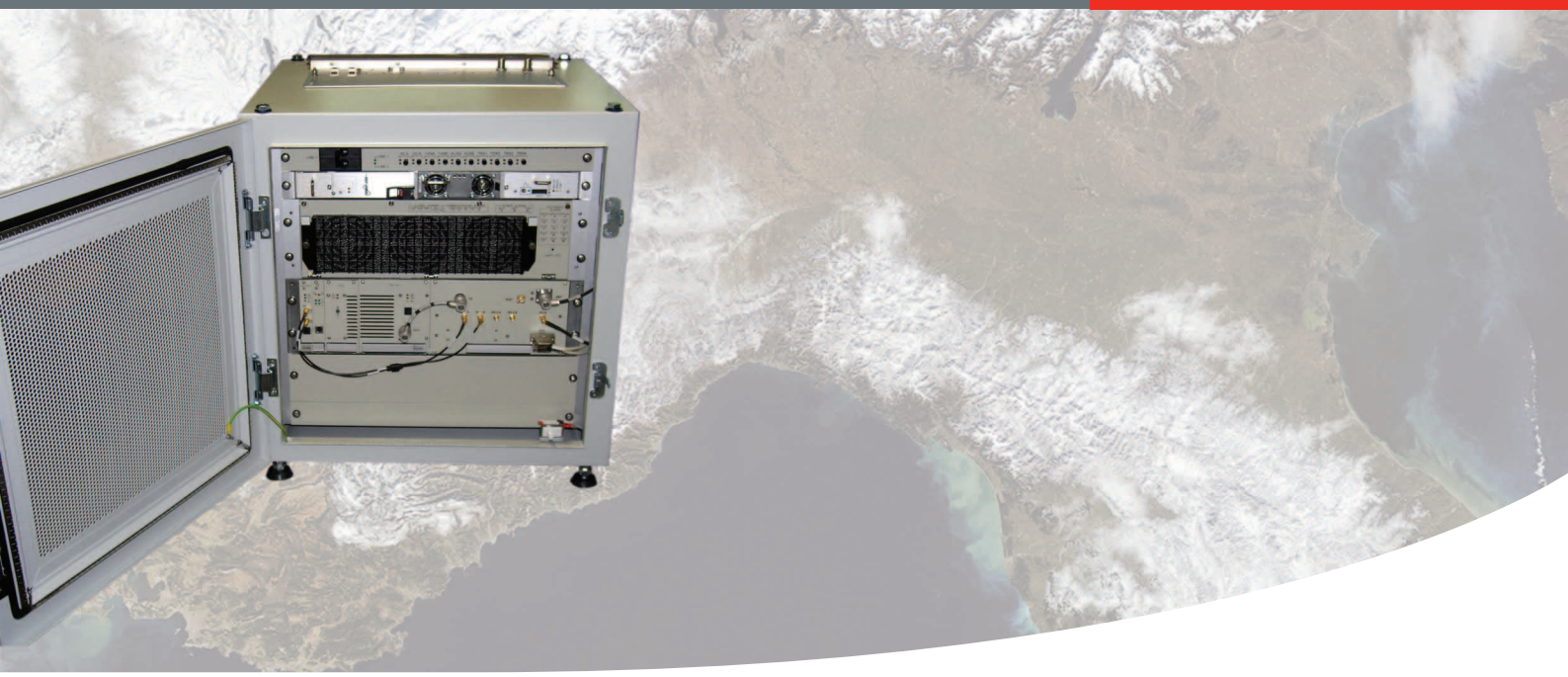
SELEX Communications
A Finmeccanica Company

> Avionics CNI > Military & Space **> Professional Communications**



Pico BS
Great performance for pico-cells

DESCRIPTION

The **Pico BS** is a powerful, compact, scalable and cost-effective TETRA communications solution. It is the ideal entry level product for a single site or for small networks (see pictures for operative scenarios).

Two versions are available in the same compact 11 U rack for different requirements:

- **Pico BS**: a single carrier TETRA base station (BS)
- **Pico BS-network**: a single-carrier TETRA BS with additional switching functionalities and VoIP gateways.

Compared with other "compact" solutions in the market-place, both systems support a wide range of advanced features for professional users, with integrated gateway capabilities for true interoperability.

FEATURES

The Pico BS offers one of the best power-to-dimensions rates, with a maximum HF output power of 60W (configurable from software with a high granularity) and a receiver sensibility around -118.5 dBm @ 4%BER. This makes it possible to readily extend radio coverage.

Equipment compactness is supported by a modular rack only 600x600x600mm (HxWxD), with support for additional internal components.

Our solution can be used as the building block for larger systems.

The Pico BS configuration, it has all the main functionality of a traditional TETRA BS, while in its enhanced "Pico BS-network" configuration, it can offer an additional switching role in a network with up to four elements.

This enables customers to expand their network's size and increase geographical coverage and traffic capacity through the use of the system's modularity.

With a wide typology of internal gateways available, both solutions can be equipped with traditional and VoIP dispatchers;

The main features supported by Pico BS during normal mode operation are those typical of our BS product's line:

- Management of the link with the switch & control node
- Implementation of TETRA Air Interface protocol up to Layer 2
- Management of security algorithms
- Full duplex and half duplex operation
- Two-way diversity reception capability
- Radio frequency (RF) duplex capability to transmit and receive on the same antenna
- Fault management relevant to external interfaces, such as those supporting the SCN link, and internal modules failures

- Status monitoring of internal modules and interface cards
- Events and alarms log
- Capability to collect site alarms and drive actuators
- Maintenance and configuration operations both locally and remotely
- Diagnostic testing activities, using specially devoted tools, to identify potential anomalies within the equipment

In the event of a link fault between the **Pico BS** and the SCN (or in case of a single site deployment without switch), the BS automatically turns to fallback, the operative mode essential for professional communications.

Our solution provides the widest range of services to users within the covered area, such as:

- Half-duplex and full-duplex individual call (both voice and data transfer)
- Group call (both voice and data transfer)
- Emergency calls
- Short data message service
- Multi-slot circuit mode data
- Implementation of TETRA air interface protocol up to Layer 2

The **Pico BS-network** configuration adds switching capabilities to the Pico BS version, to offer a very compact single-site, small network solution.

It can represent the very first stage in creating entry level networks with up to four elements (BSs or WAN dispatchers) managed simultaneously.

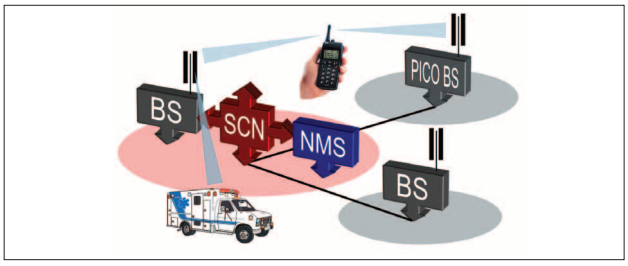
It can be connected to all our TETRA products for further expansion and become member of a larger regional/national network.

Internal gateways can provide the following interfaces:

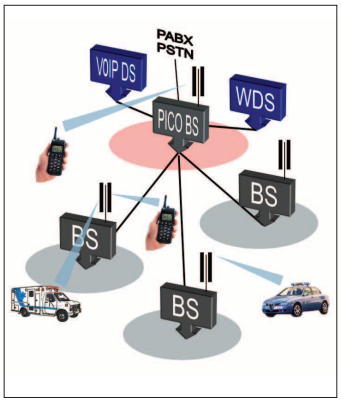
- LAN interfaces for up to two VoIP dispatchers, five VoIP Phones and one LAN dispatching station
- ISDN-PRI interface
- Analogue 2-wire/4-wire E&M interface

Power supply is available in direct or alternate current (220V AC/-48V DC) for different operational scenarios.

Pico BS - Fallback mode



Pico BS as radio element of a larger network



Pico BS-network combining both switching and radio functionalities

TECHNICAL DATA

	Pico BS	Pico BS-network
Frequency Band (MHz):	380÷400, 410÷430, 450÷470	
Duplex spacing:	10 MHz	
Rx sensibility @4% BER dynamic:	- 118.5 dBm static, -109.5 dynamic	
Power class:	Class 2 (EN 300 392-2) 44 dBm (25 W)	
Power range:	10 dB (2 dB steps)	
Diversity:	Optional	
Transmitter output power (W):	60W (+48 dBm)	
Weight (Kg.):	50	58
Power supply:	-48V DC nom. (positive ground), range -44÷ -60V DC (Opt. 220V)	
Power Consumption (W) (*):	450 W	450 W + PC
Dimensions (H x W x D) mm:	600x600x600	
Interfaces:	2 E1	up to 4 E1, 1 ISDN PRI, 1 Eth.
BS connectable:	----	Up to 4 BS
Switch Functionalities:	Fallback features	Yes
Gateway:	Optional	standard + VoIP
DS connectable:	1	up to 4 WDS + VoIP DS
GPS:	Optional	
Operation:	ETSI ETS 300-019-1-3, class 3.1E/ETSI ETS 300-019-1-3, class 3.1	
Storage:	ETSI ETS 300-019-1-1, class 1.2	
Transportation:	ETSI ETS 300-019-1-2, class 2.2	
EMC:	ETSI EN 301 489-18	

(*) max. at full RF power rating

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