

BS Node

CYBER SECURITY DIVISION

TETRA Radio Base Station

The Radio Base Station (BS Node) is a main network element of the ElettraSuite Adaptanet® IP TETRA solution, working to supply a capillary radio coverage in the networks with a high performance 4-carriers Base Station.

The BS-Node is a Dual Mode BS able to operate connected to a TDM Switch or an IP Call Manager (CSP) depending on simple configuration.

BS Node is a fast deployable, plug & play and state-of-the-art equipment that allows building networks in which voice and end user data are always routed according to architecture among the network nodes, thus exploiting all the benefits of full-IP connectivity.

The Base station is available in fully redundant configuration without any single point of failure. It supports local connectivity to Dispatchers and Interface services to Local PABX especially useful when the BS operates in Fallback.

BS Node is specifically designed in order to support a high level of performance on a 24-hour-a-day basis, even in case of failure of some of the internal modules thanks to redundancy of main modules, links to other network elements and a powerful fallback mode.

KEY FEATURES

- › Direct connection to IP backbone through Ethernet ports
- › E1 connectivity, with integrated Ethernet switch - 2 Mbit/s (ITU-T G.703/G.704 compliant) as option with drop insert capability
- › Powerful Fallback Mode supporting group/individual calls, data transmission and encryption
- › Mountable in standard 19" cabinet thus being capable of exploiting any existing cabinet for installation and maintenance cost saving.

TECHNICAL DATA

GENERAL

Carriers number	Up to 4
Power supply	-48 Vdc (positive ground) (range -44 to -60Vdc)
Consumption	Approx. 1.440W (@-48 Vdc)
Current rate	35A max for 4 carriers
Clock	Synchronization by ext. 2Mbit/s link or internal GPS receiver
Operating frequency bands	<ul style="list-style-type: none">› 340-360 MHz› 380-400 MHz› 410-430 MHz› 450-470 MHz› 806-870 MHz
Channel spacing	<ul style="list-style-type: none">› 25 kHz P/4 DQPSK carrier› 25/50 kHz QAM carrier (as option)
Rx/Tx duplex freq. spacing	<ul style="list-style-type: none">› 10 MHz for 400, 430, 470 MHz bands› 45 MHz for 870 MHz band
Modulation type	<ul style="list-style-type: none">› $\Pi/4$ DQPSK› 4-QAM, 16-QAM and 64-QAM (as option)
Operation	Full duplex
Transmitter type	AB class type
Power classes	<ul style="list-style-type: none">› Power class 2 (44 dBm) per DQPSK carrier› Power class 4 (40 dBm) per QAM carrier› Measured at the antenna connector according to ETSI EN 300 392-2
Receiver type	<ul style="list-style-type: none">› Class A› Super-heterodyne, double conversion, 3 ways diversity
Rx static sensitivity	<ul style="list-style-type: none">› -117 dBm (for 340-470 MHz frequencies range)› -115 dBm (for 806-870 MHz frequency range)
Rx dynamic sensitivity	<ul style="list-style-type: none">› -108 dBm (for frequencies range 340-470 MHz)› -106 dBm (for 806-870 MHz frequency range)
Antenna distribution	Direct, Rx space diversity (up to 3 separate Rx chains)

MECHANICAL SPECIFICATIONS

Cabinet	According to DIN 41494-1 standard (19" x 21 HE)
Cabinet external dimensions	(HxWxD) 1.200x600x400 mm [47,24 x 23,62 x 15,75 in]
Weight	165 kg approx. [363,76 lb] (fully equipped)
Protection degree	IP 20 according to ETSI EN 60529
Sub modules	Dimensions according to Eurocard IEC297 standard

ENVIRONMENTAL CONDITIONS

Operation	ETSI EN 300 019-1-3, class 3.1E (-10°C to +45°C) [14°F to 113°F]
Storage	ETSI EN 300 019-1-1, class 1.2 (-25°C to +70°C) [-13°F to 158°F]
Transportation	ETSI EN 300 019-1-2, class 2.2 (-25°C to +70°C) [-13°F to 158°F]
EMC	<ul style="list-style-type: none">› ETSI EN 301 489-1 and ETSI EN 301 489-5› FCC approved (FCC Title 47 CFR Part 15)

EXTERNAL INTERFACES

- › 2 bi-polar power connectors
- › 4 x 10/100/1000 LAN ports or 2 x 10/100 LAN ports
- › Up to 6 N female RF connectors
- › Up to 5 SMA female connectors
- › 8 RJ-45 ports for external connections
- › 8 RJ-45 ports for 120 ohm E1 links management (as option)
- › 1 DB-9 RS232 connector for local terminal
- › 24+8 terminal blocks for external alarms/actuators.



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