1.1 SB421 SERVICE BOX

Description
The DAMM SB421 Service Box offers full physical support for up to two DAMM BS421 base stations and contains a Base Station Controller, a Power Supply, and space for optional Built-in Batteries and plugs to LAN connections boards to 2 BS421 and WAN connection to IP backbone.

The SB421 Service Box is designed for out-door use and to be mounted directly on the antenna mast in a distance of up to 150 meters from the base stations. The unit is to be fastened and installed on a mounting plate, which is supplied with the service box - including clamps from 30– 102 mm Ø. As an option mounting kits to fit units up to 200 mm Ø can be supplied. The unit is supplied with individual lock system but can optional be delivered with system lock and system key.

BSC421 Base Station Controller
The core of the BSC421 is a built-in Pentium host computer, and a CF card disc, running the operating system Microsoft Windows WES2009.
In addition to this the system is supplied with built-in Ethernet switch permitting LAN connection to 2 BS421 base stations and WAN connection to the IP backbone and other networks nodes.

The BSC421 base station controller is running the DAMM BSC421 software as well as the DAMM OM software.

Besides of this, it provides a solid platform for TETRA system vendors to integrate their TETRA functionality and applications to the base station controller and the connected BS421. The host computer contains an USB port, intended for dongle protection of this application software.

The message interface specification to the TETRA Layer 3 software is compatible with the BSC412 used in the DAMM BS41X indoor base stations.

The BSC421 software handles message connections for up to 4 BS421 base stations and secure time and frequency synchronization between the numbers of connected BS421.
It receives the derived GPS synchronization information from one or more of the BS421 and decides the master/salve relations and secures the distribution to all BS421

The OM software is giving control of almost all functions and access to a large number of test points in both SB421, inclusive of the power supply, but also to the number of BS421 connected to the service box. It also makes it possible to do software upgrades and download new software and to supervise diagnostic and control the settings and functionality of the BS421 connected. The OM software can be access either locally or remotely.

Power supply and charging
The SB421 Service Box is equipped with a built-in power supply for connection to 100-240 V AC or -48 V DC, and offers -48 V DC output for own circuits and for 2 DAMM BS421 base stations. The unit includes a rectifier with control and charging circuit for the optional internal battery module or external battery units. The internal battery module supplies battery back-up for up to two hours of operation depending on the number of base stations.

The SB421 is lightening protected by internal circuits. For service and maintenance purposes the unit can easily be dismounted from the mast by means of connection boards, which disconnects all cable connections at the same time

Optional redundant configuration
The SB421 Service Box supplied with BSC421 software for redundant hot stand-by operation of a second service box making it possible to control 4 carriers per site. This configuration offers full redundancy with no single point of failure.

Specification

Parameter	Value
Operating system	Microsoft Windows WES2009 embedded
CPU	Intel Atom D510 1.66 GHz
RAM Memory	2 GB
CF disk multiple partition	8 GB (2GB+2GB+4GB)
CF disk multiple partition option	16GB (2*2*12)
LAN connection	Ethernet 10/100Mbit/s
WAN connection	Ethernet 10/100Mbit/s
Power Supply:	
Supply voltage	100-240V AC or - 48V DC without battery
Output voltage	- 48V DC
Output current	6 Amp
Power consumption	20W (Idle excl. charging and transceivers)
Optional internal battery or	4 x 12V 7Ah
Optional external battery	4 x 12V
Internal connectors:	
Connector for external monitor	15 pol. VGA
Connector for mouse/keyboard/dongle	USB
Internal LAN test connector	RJ45, Ethernet 10/100Mbit/s
External connectors:	
Connector module for 2 x BS421	
2 x power	Screw terminal 3 x 2.5# (-48V, 0V, GND)
2 x LAN / 1sec sync.	LSA
Connector for LAN/WAN	
1 x LAN 10/100Mbit/s	LSA
1 x WAN 10/100Mbit/s	LSA
One sec. sync input	LSA
Temperature sensor for external battery	LSA
8 x External alarm IN	LSA
- 48V out for external router/modem etc.	Screw terminal 3 x 2.5# (-48V, 0V, GND)
Mains connector:	
AC Mains connector	3 x 4# (Phase, 0, GND)
External DC supply or external battery connector:	
- 48V DC	3 x 4# (Phase, 0, GND)
Physical	
Dimensions incl. mounting bracket (HxWxD)	375 x 283 x 215 mm
Weight incl. mounting bracket and battery	20 kg
Weight incl. mounting bracket	9 kg
Wind area	0.10 sq. m
Storage Temperature with battery	See battery specifications
Storage Temperature without battery	-40° C to +85° C Ambient air temperature
Operating temperature with battery	See battery specifications
Operating temperature without batteries	-25° C to +55° C Ambient air temperature
Encapsulation	IP65

Ordering

Item number	Description
105105	SB421 Service Box, 1,66GHz Intel Atom D510 with CF-card