

ACCESSNET[®] - contact

Ready Steady Go, the SMALL Trunked Radio System

The task of communication technology is to allow people to communicate with each other, regardless of where they are. *ACCESSNET*[®] from R&S BICK Mobilfunk, as a professional mobile radio application, can help you to achieve this objective at an affordable price. Less is often more because practical needs show that solutions are required for small areas and why should one

have to invest in large systems? Our new trunked radio system *ACCESSNET*[®] - contact was specifically designed with small areas in mind. As a low-cost system its main areas of application are to cover a works site or as a gap filler cell in areas with poor coverage. *ACCESSNET*[®] - contact can also operate as a small self-contained network. For this task it has been equip-

ped with a network management system. The exchange provides four interface modules to connect the radio base station and a further four free ports allow sufficient room for expansion. All *ACCESSNET*[®] systems work in accordance with MPT-1327 and thus support a worldwide standard. This is naturally also true for *ACCESSNET*[®] - contact.



ROHDE & SCHWARZ

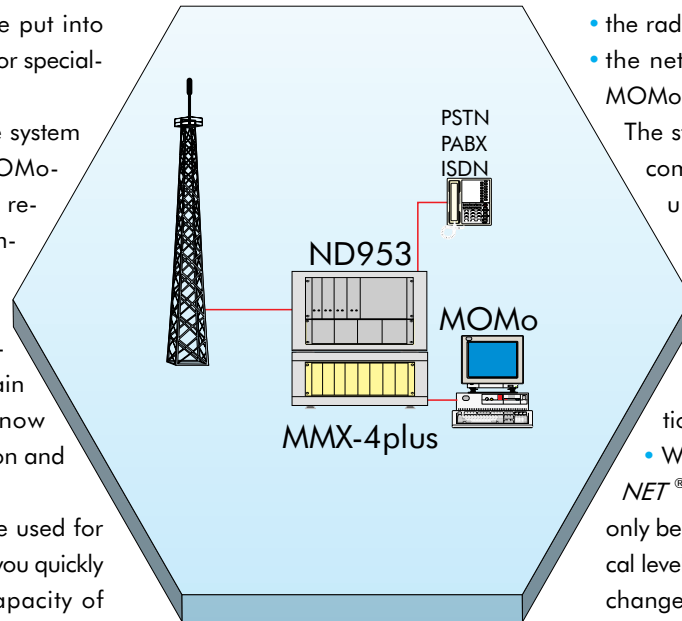
The System

ACCESSNET[®] - contact is a full trunked radio system. Distinctive features are its simple installation, ease of use and low price. Thanks to the installation manual supplied the system can be put into operation without the need for specialist knowledge.

Once the installation of the system has been completed MOMo-Change is used to enter all required configuration parameters such as channel number, Syscode, etc. MOMo-Change automatically transfers entered data to the main processor. The system is now ready to be put into operation and can be booted up.

The free ports which can be used for further interface modules let you quickly and easily increase the capacity of *ACCESSNET*[®] - contact. Should all expansion slots have been used it is possible to expand *ACCESSNET*[®] - contact to a new multicell system by connecting it to a MSC (Master System Controller). All existing components can still be used.

These advantages and the worldwide use of *ACCESSNET*[®] mean that your investment is safe, because the system



is subject to continuous system maintenance and development.

The *ACCESSNET*[®] trunked radio system concept allows for a variety of uses. Modification of the design and implementation of new functions are available upon request.

The Components

ACCESSNET[®] - contact in its standard version consists of the following components:

- the exchange MMX-4plus
- the radio base station ND953
- the network management system MOMo

The standard version contains all components required for setting up *ACCESSNET*[®] - contact as a Trunked Radio System.

Because of the compactness of the *ACCESSNET*[®] - contact the following limitations should be noticed:

- When used within *ACCESSNET*[®] systems the MMX-4plus can only be used on the lowest hierarchical level, it cannot act as a master exchange for other exchanges.
- The exchange does not have the internal computer bus which is used in the MMX family, therefore further alarm outputs and additional serial interfaces cannot be made available.

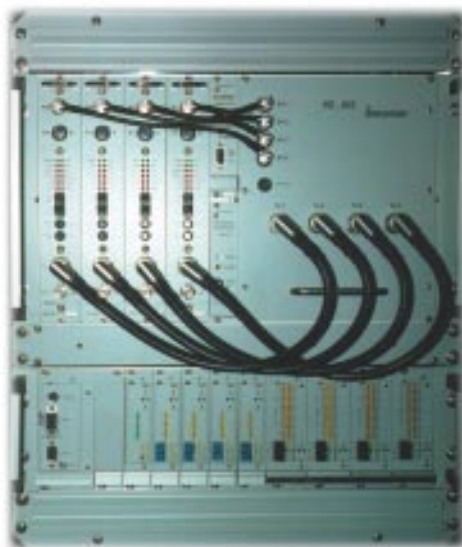


Fig.: *ACCESSNET*[®] - contact Frontview

The Power Supply

ACCESSNET[®] - contact is suitable for use in different locations. In order to allow flexibility of use the system is available as a DC version (36-72 VDC) or as an AC version (230 VAC).

It can also be operated using an uninterruptible power supply.



The Exchange MMX-4plus...

...consists of just one 3U high 19" sub-rack. The subrack contains the main processor, the node processor, 4 interface modules LIA (Line Interface Analogue) and 4 free ports for further interface modules.

The main processor of the exchange carries out all control tasks within the system. The required configuration data is supplied to the main processor by the network management system MOMo which is connected to the main processor via a RS232 interface. Connection of a GPS time receiver to the main processor's second serial interface is optional.

The program or the required data is loaded via the integrated solid state disk. Using a solid state disk provides a number of advantages such as fast access times, high data security, extended temperature range and most importantly no loss of a data carrier. The exchange subrack is equipped with a backplane providing all required connections and ensuring simple installation when expanding.

An upgrade kit for connection of a SCU (Speech Compressor Unit) is available as an optional extra which would allow voice and data channels via ISDN lines.

The MMX-4plus can be expanded using the following interface modules:

- LIA (Line Interface Analogue); for connecting Radio Base Stations (RBS), Dispatcher Terminals and for networking to the MSC (Master System Controller)
- PIA (Phone Interface Analogue); to connect to PSTN/PABX
- PID (Phone Interface Digital); to connect to ISDN

The MMX-4plus comprises a total of 16 alarm inputs and one alarm output. 8 of the alarm inputs and the alarm output are freely available.



Fig.: MMX-4plus with ISDN-Interface-Modul PID-420



The Network Management System MOMo

With MOMo a powerful network management system for *ACCESSNET*[®] - contact is provided. It comprises the modules MOMo-Change and MOMo-Maint for the configuration and maintenance and management tasks respectively.

These modules will run on any IBM compatible PC with a DOS operating system. MOMo is connected to the MMX-4plus via a serial interface. Connection can either be direct or, for larger distances, via dial-up modem.

The MOMo-Change Module

MOMo-Change is needed when putting the system into operation or when making changes to the configuration. The module is used to enter or to change operating parameters or hardware configurations. When putting the system into operation MOMo-Change is used to configure *ACCESSNET*[®] - contact. Upon completion of the configuration MOMo transfers the data to the main processor and the MMX-4plus can subsequently be booted.

For remote operation the configuration can be transferred via modem. The

data transferred is stored in the main processor's RAM and saved on the solid state disk.

MOMo-Change will allow you to change the configuration of the following components:

- GPS receiver for time signal
- Port 4 ... 7 with module related data from PID, PIA, LIA
- SCU.

The following operating parameters can be changed:

- Allocation of alarm inputs for external alarms
- Channel allocation
- Syscode
- PABX/PSTN gate
- ISDN gate
- Releasing subscribers
- Blocking subscribers
- Call times.

The MOMo-Maint Module

MOMo-Maint visualises the exchange and its immediate environment such as radio base stations and connected interface modules. This makes the operational state of individual components

and connected lines immediately visible. Necessary service tasks can therefore be pinpointed and thus carried out cost effectively.

Once MOMo-Maint has been connected the call data buffered by the MMX-4plus can be retrieved. MOMo generates data sets from the received data which form the basis for further processing, such as an invoicing system or a network analysis. The options for releasing and blocking of subscribers are functions which can be triggered using the MOMo-Maint module.

The Subscriber Management

A predefined list of subscriber data is supplied with *ACCESSNET*[®] - contact. This subscriber list contains data of predefined fleets and entitlements. The network operator then programs the radio units in accordance with the information on the list. And this is all there is to it, the subscribers can then immediately operate within the system.



The Radio Base Station ND953

The ND953 is a 4 channel radio base station specifically designed for use with *ACCESSNET*[®] - contact. This particularly is indicated by its compact design. Installation of the ND953 is simple. Connection to the exchange is via a 4-wire cable. After connecting the antennas and the power supply the radio base station becomes operational. The transmitter power of the ND953 is variable and can be up to an output power of 6W.

Possible frequency ranges are:

- 380 MHz - 400 MHz (optional)
- 410 MHz - 430 MHz (standard)
- 450 MHz - 470 MHz (optional).

Channel spacing is 12.5 kHz.



Fig.: ND953 with portablen Case

Technical Data

Trunked Radio Exchange MMX-4plus

Signalling Standard	MPT-1327, MPT-1343, ZVEI Regionet 43, CNET 2424
Serial Interfaces	2 (RS232)
Interface Ports	4 for connecting ND953 4 free for LIA, PIA, PID

Radio Base Station ND953 (Standard, others available on request)

Operating Mode	Duplex
Duplex Spacing	10 MHz
Channel Spacing	12.5 kHz
Frequency Range	410 ... 430MHz
Output Power	0.5 ... 6 W
Number of Channels	4

Network Management System MOMo

MOMo Software Licence for *ACCESSNET*[®]-contact only, comprising:

- MOMo-Maint
- MOMo-Change

Licence for IBM compatible PC with DOS Operating System (PC not included)

General Technical Data

AC Power Supply	230 V, $\pm 15\%$, 47 ... 63 Hz
or	
DC Power Supply	36 ... 72 V
Power Consumption	710 W (VA)
Temperature Range	0 ... +55°C
Relative Humidity	20 ... 75 %
Dimensions (WxHxD)	540 x 620 x 700
Weight	ca. 75 kg

Order information *ACCESSNET*[®]-contact

<i>ACCESSNET</i> [®] - contact 230 VAC	75ACN090V011
<i>ACCESSNET</i> [®] - contact 36/72 VDC	75ACN090V012



ACCESSNET[®] - contact...

...mobility for professionals

ACCESSNET[®] - contact Features

Communication Services

Individual call
Group call
Broadcast call
Priority call
Emergency call
Include call
PSTN call
PABX call
ISDN call

Additional Services

Call diversion
Callback request
Object oriented calling using suitable radio terminals

Operating Modes

Queueing mode
Private radio mode
Telephone mode
Duplex mode

Data Calls

Status messages
Short data messages (SDM)
Extended data messages (EDM)
Non-prescribed data (NPD)

