

GeoBase20

Compact-appliance

V 1.0E pre6

Preliminary Documentation

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1. Introduction

Dear customer,

with your purchase, you have decided in favor of a technologically high-quality product, that has left our house in a perfect condition.

Check the wholeness and the condition of its delivery nevertheless. If any lacks should appear, we ask you to inform us immediately.

Before you use the module with your other appliances together, you please read through this instruction manual, especially the chapters to the installation, alertly. Heed above all the section to the installation and the technical data, especially the limits. This saves you unnecessary problems to make the unit operational.

We have put in effort to accommodate preferably much information over the product in this handbook. If you should nevertheless have questions, that this handbook cannot answer, our application-department is available to you per telephone or fax of course.

If a technical defect should appear with the products acquired by you, we offer a repair-service under the address presented in the appendix.

1.1. Delivery capacity

We are of course solicitous, you, to deliver a complete product-package. In order to guarantee in each case however, that your delivery is complete, you can check the completeness of your package on basis of following list.

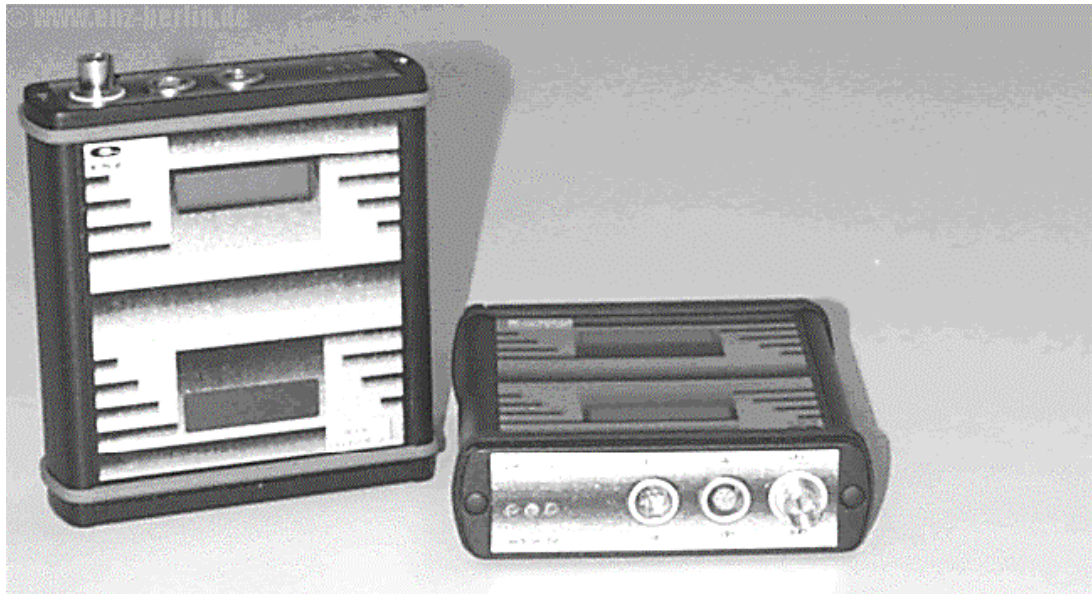


Illustration 1: GeoBase 20 UD

The presented hardware-components belong to the delivery capacity of the GeoBase20:

- GeoBase20 in the ordered option as table-appliance,
- Data- / power-cable incl. car fuse
- optional uplink-cable in case of radio connection in the ordered option
- optional mains adapter 12 volts DC / 1 amps
- this manual.

1.2. Features

The GeoBase20 serves referring to an application the transfer of serial data-streams over the GSM900 network or over a 433 MHz radio data telemetry. The integrated data-switch direct the incoming data according to operating mode via one but also of the two data-paths.

The GeoBase20 is conceived so that it can use between an already existing connection from a transmitter of serial data, for example GPS-data, and a radio modem. After connecting the power to the appliance, the data are transferred in accustomed manner.

Additionally, the possibility exists, to transmit the serial data-stream over a GSM connection.

This operating mode is ready approximately 1 minute after power on the unit. During this waiting time the integrated GSM-engine is initialized and booked into the GSM900 network of the prevailing net-providers. Within Germany the two 'D'-networks ,T-D1' and ,D2 Privat' are supported.

For the operating mode ,GSM "a data-efficient 3 volt mini SIM-card is necessary. Information which services are free-switched for the own card, can be interrogated from the network- provider!

The GeoBase20 cannot begin a GSM transfer itself. The appliance reacts to authorized telephone calls and distribute then further the data to the caller. During this time, the transfer to the radio-route is kept going.

The completion of the transfer is also to be enforced from the caller. The GeoBase20 cannot hang- up over control-commands in the data-stream since no monitoring of the data-content takes place! A line hang-up of the caller is appraised as switch-off criterion. Of course, serious mistakes in the GSM network also result in the demolition of the connection.

1.3. System requirements

The GeoBase20 is thought as autonomously working appliance. For its operation no additional software installation is necessary. The appliance requires a voltage of nominally 12 VDC with a current of 1 amp. For setting the parameters such an appliance is needed, which is able to send and receiving text messages as ASCII characters via an RS232 interface to the GeoBase20. In the simplest case any terminal-program can be used. No particular operating system is required.

The interface-format is set permanent to 9600 baud with 8 data-, 1 stop- and 1 start-bit.

1.4. Used conventions

Abbreviations

GSM	Global mobile-radio-network, Global System for Mobile Communication,
hex	hexadecimal, to the basis 16,
HF	high frequency
I	current
NL	Nominal-length
p	Pressure
PC	Personal computers
U	tension
LED	thin emitting diode
PIN	Personnel Identification Number
SMS	Short Message Services
nc	not connected
dBm	unit for the reception-sensitivity

Used (pseudo-) units

A	amperes
bar	bar (pressure)
°C	degree Celsius
m	meter
Ω	Ohms
s	second
V	volts
W	watts

Used potencies

p...	Pico... / 10^{-12}
n...	Nano... / 10^{-9}
μ ...	Micro... / 10^{-6}
m...	Milli... / 10^{-3}
c...	Centi... / 10^{-2}
k...	Kilo... / 10^3
M...	Meg... / 10^6
ppm	parts per million

2. Hardware

The appliance is accommodated in a compact aluminum casing. It is delivered as table-appliance. On the front three LED's are integrated as indicator for the condition in use. All necessary cable connections are also on this side.

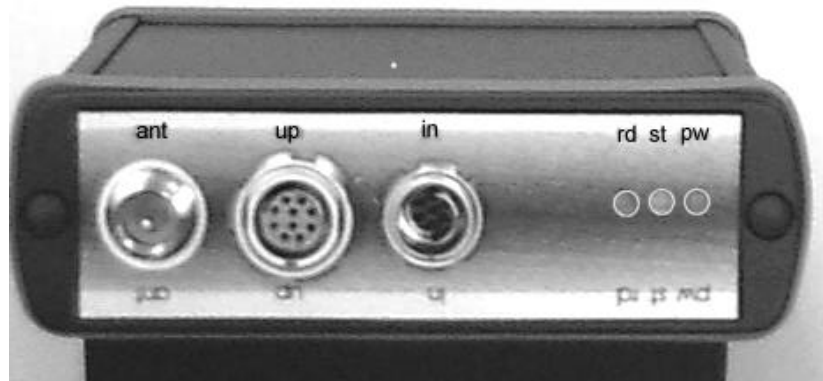


Illustration 2: front-view

On the back, behind a detachable cover, are the SIM cardholder and the button to change into the configuration-mode.

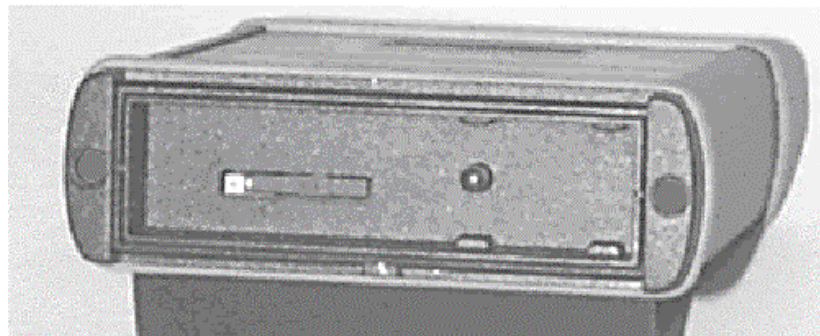


Illustration 3: rear view without cover

The upper side of the display version shows a two-lined LCD.



Illustration 4: top view with LCD

2.1. Appliance-options and production-variations

The GeoBase20 was conceived as data-switch between GSM- and radio-network. A full Geobase20 is equipped with uplink-port and display. In order to the user-needs, there are also useful economical variations. Subsequently, a table shows the possible variations:

No	Variation	Order-name
1	GeoBase with uplink and display	GSMGEOB20UD
2	GeoBase with uplink	GSMGEOB20U
3	GeoBase with display	GSMGEOB20D
4	GeoBase Basic	GSMGEOB20

Dependent on the appliances to be connected the necessary cables are to specify. A data-/ power-cable belongs to the delivery capacity:

No	Data- /Power cable	Order-name
1	Data-cables with external power Ashtech/Javad	5990010-02
2	Data-cables with internal power Ashtech/Javad	i. prep.
3	Data-cables for TopCon/Trimble	i. prep.

Optional:

No	uplink-cable	Order-name
1	uplink Satel (DB15)	5990020-01
2	uplink OPC (DB9)	5990030-02

2.2. Installation of the GeoBase20

For the purpose-appropriate operation of the GeoBase20 certain connections to other appliances are to do.

Warning: during the entire installation the GeoBase20 must not connected to any power source! No connections should be removed or done if the GeoBase20 is powered!

Technical no certain sequence is to heed to produce the connections. The practice has shown that it is advisable to begin with installing the SIM-card (3volts-type). The detachable cover is opened carefully

with a screw-turner. With a suitable object, for example ballpoint or screwdriver, the SIM-cardholder should be opened by a light pressure onto the yellow ejection button. The cardholder is to be taken off and the SIM-card has to be put into it. The cardholder has to be inserted properly again and to lock under light pressure.

To the utilization of the GSM functionality, a GSM900 antenna is to connect first at the front side FME-socket „ant“. Further the delivered Data- /Power-cable will be connected with the connector „in“.

According to cable-version, the power distribution will be done in external or internal manner by this connection. It is to be kept an eye on it that only the connection on the side of GeoBase20 would be done now. By no means the connection to the power supply should take place now!

Has a GeoBase20 an uplink-port, the uplink-cable will be connected with the connector „up“.

Following, the radio-modem is connected on the other side of this cable.

For its operation, the connection of a data-transmitter not necessarily. It is to be kept an eye on it that all connections are done without force. The plugs to the GeoBase20 are executed twist-safe and raged audibly when plugged in. Removing of the connection happens through axial traction of the bolt shell of the plug casing! A traction at the cable cannot disconnect the connection but will help to damage the cable. The plugs cannot be turned for disconnect them. Following some explanations are described for individual connections!

2.2.1. GSM antenna

The antenna will be connected to the front side FME socket (screw thread) „ant“. Customary GSM900 antennas are mostly equipped with a male FME connector that fits directly into this socket. If the antenna also has a male FME connector a matching FME adapter should be used. For a trouble-free operation, only antennas for the GSM900 network should be used.

2.2.2. SIM-card

Before switching on, the card holder with the SIM-card is to be pushed into the card socket on the casing-rear. The yellow release-button is used for open the cardholder.

Only 3-volts SIM-cards can be used. Older versions of 5-volt cards don't work together with the SMS-Server. Information to the type of the card you will get from your network provider. Normally, a trouble-free exchange is possible.

The contacts of the SIM-card are still visible after putting in into the removable cardholder. If the GeoBase20 is held so that the yellow release-button is left side, the contacts of the SIM-card must show downwards when inserting.

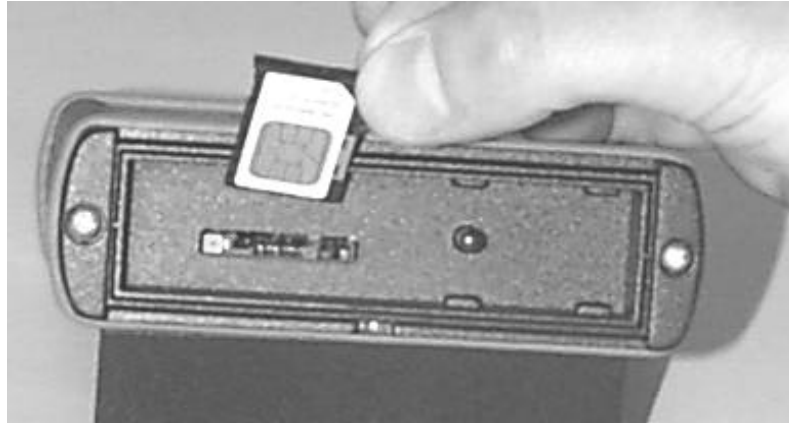


Illustration 5: insert the SIM-card

Warning: if the green registration-LED „rd “shines, blinking or continuously, the SIM- card must not taken out or placed into the card socket, because otherwise no repairable damages of the SIM-card can occur!

2.2.3. Voltages

The power input VCC is done for 12 volts. The source must deliver a current of 1 A for approx. 2 minutes, the constant current with an uninterrupted data stream is about 700 mA. External a short-protection fuse of 2A **middle-quick is to provide.**

On the data-cable with external **power**, the DC connectors are color-like marked. The red plug is to be connected with the PLUS **pole** of the source, the black with the MINUS **pole**. As additional protection-function, a **protection against reversed polarization** is installed into the cable. If the connection is done incorrectly, no current can flow, since a semiconductor-diode „interrupts “the connection in blocking-direction. This **polarization protection** doesn't represent an overload protection however! After a wrong polarization you have to wait a while before you can connect again to the power source. (!!! Fehlt auch in 1.0D)

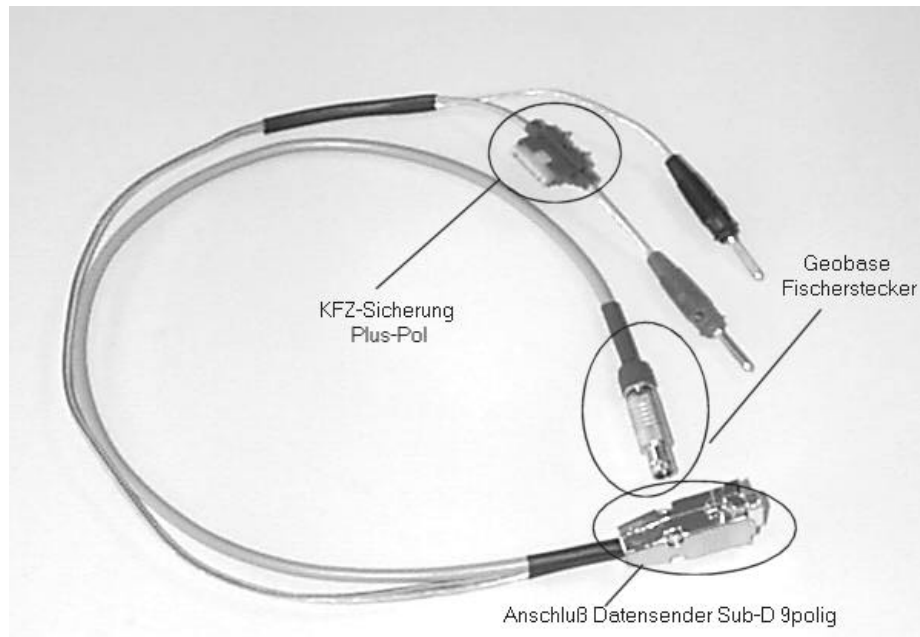


Illustration 6: data-cables with external power

2.3. Settings data-transmitter

For the transmitter of the data to the GeoBase20, the interface is only to be adjusted to the right format. The GeoBase20 supports at present only the baud rate of 9600 with 8 data-bits, without parity and a stop-bit; 9600,8-N-1. Hardware RTS/CTS handshake isn't necessary and isn't prepared for connected appliances either.

If the connected transmitter doesn't send any data despite a right cable connection, it is to be checked, whether a handshake option was activated for the used appliance. This option must be deactivated. Hints to it should be taken from the respective appliance-manual. If a deactivation is not possible, the data-cable can be modified so that suitable bridges in the plug reproduce the handshake signal. This work should be done however only from an authorized specialist since an improper handling can lead to the destruction of the connected appliances. Consult your compartment-distribution relating to this please.

A data-traffic from the GeoBase20 to the data-transmitter is not intended. The data transmitter serves only as data-sources.

2.4. Settings GSM dialing appliance

The GeoBase20 can get in connection with a telephone network modem or GSM modem. Also mobile phones with integrated data-modem can be used. The GeoBase20 cannot build up a connection!

On the basis of the varieties of appliances, only some concrete applications are introduced here. For other appliances, this description should be brought adequately to the application.

2.4.1. Data-mobile phone SAGEM RD750 / MC850X

The mobile phone should transfer the data in the secured mode. The corresponding menu-point is to be activated. The alternative „transparent transfer“ can lead to increased transfer-errors.

With the optional available serial data-cable the modem parameters can be set. Only a terminal-program with access to a RS232 connection is needed. The quasi-standard of the AT-Hayes commands will be used. For a securely cooperation with the GeoBase20 we recommend following settings:

- ATB29\N4E0V1Q1 < ENTER >

With this setting a secured connection with 9600 baud, with which the message is stopped to the terminal, is built up. Commands are not sent back to the terminal by means of an ECHO. A more exact description of the individual commands should be taken from the appliance-manual of the mobile phone. There is also described the process for some dispersed terminal-programs.

The setting of these initialization-parameters is also to be reached over the appliance-menu; the manual is to be consulted for this again.

If the data-connection should be dialed with the keyboard of the mobile phone, the keyboard-selection must rearranged from voice- to data-connection. Also to this, the manual is useful.

2.4.2. SIEMENS M20 Terminal

The M20 contains the same GSM-engine like the GeoBase20. It is to take care that the RLP protocol is activated. Otherwise, one can work with the factory defaults.

2.4.3. Telephone network-modem Sportster Flash

This modem of the company U.S. Robotics can be used with the factory defaults. It is to take care that the baud rate is set to 9600bps; faster settings cannot be used because of radio-limitations within the mobile network. Also an error-secured connection should be preferred.

2.5. Pin-out of data connector „in“

The data input is led to a 7-pin Fisher mounting-socket (male-contact) of the series 103. Within this plug also the voltage for the GeoBase20 is supplied and distributed to a possibly connected radio-modem.

Pin Fisher	Signal	Remark
1	Data Receive	data sent by the GeoBase (from SW1.08)
2	Vcc	Vcc must be supplied over both pins!
3	Vcc	
4	GND	GND must be supplied over both pins!
5	GND	
6	Data Transmit	data sent to the GeoBase (DGPS data)
7	nc	not connected

The counterpart is led on a 9-pin DB-socket. It is intended for the direct connection at the GPS receiver; according to the appliance an adapter is possibly necessary. Since the GeoBase20 supports no hardware-handshake at present, the signals RTS/CTS and DTR/DSR are internally bridged in the DB9 plug.

The power cables are not allowed to fix at the DB9 socket. The connection takes place in the casing. But it is to made sure a connection to pin 5 of the DB9 socket (GND).

Pin DB9	Signal	Remark
1	nc	
2	Data Receive	from SW 1.08, previously nc
3	Data Transmit	(DGPS data)
4	DTR	bridged with DSR
5	GND	
6	DSR	
7	RTS	bridged with CTS
8	CTS	

9

nc

2.6. Pin-out of uplink connector „up“

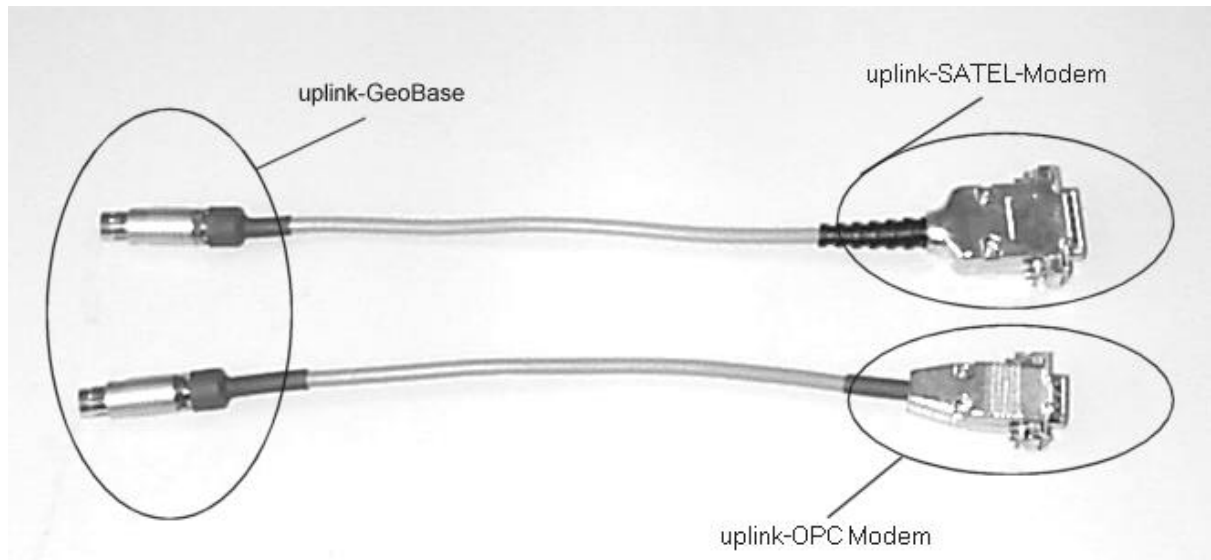


Illustration 7: uplink-cable

The connection to the radio-modem will be established via a 10-pin Fisher mounting-socket (socket-contact) of the series 1031. Via this way, also the power is delivered to the radio-modem.

Principal each radio-modem with RS232 interfaces is connectable. Specifically for the series „2ASx“ from SATEL and for the OPC modems xx10 until xx12 are ready made cables available.

Pin Fisher	Signal	Remark
1	nc	
2	nc	
3	VCC	VCC must be supplied over both pins!
4	VCC	
5	GND	GND must be supplied over both pins!
6	GND	
7	modem transmit	
8	modem ON/OFF	do be used for the ON/OFF switching of the radio-modem
9	nc	
10	Data Receive	one requires for the configuration, until SW 1.07

2.6.1. Uplink-cable SATEL 2ASx

The SATEL 2ASx is connected at a 15-pin DB15 plug. Also here the Handshake signals RTS/CTS are bridged.

Pin DB15	Signal	Remark
1	Modem ON/OFF	used for the ON/OFF switching of the SATEL 2ASx
2	nc	
3	Data Receive	required for the configuration, until SW 1.07
4	nc	
5	nc	
6	RTS	bridged with CTS pin 13
7	GND	GND must be supplied over both pins!
8	GND	
9	nc	
10	nc	
11	SATEL Transmit	
12	nc	
13	CT	bridged with RTS pin 6
14	VCC	VCC must be supplied over both pins!
15	VCC	

2.6.2. Uplink cable OPC xx10 until xx12 (10 and 500 mWs)

The OPC modem is to connect at a 9-pin DB9 plug. The Handshake signals RTS/CTS are bridged. The OPC appliance owns no control line to turn off the modem. Consequently, the modem remains switched on also during the GSM transfer. The bridge between RTS/CTS is necessary!

Pin DB9	Signal	Remark
1	Data Receive	required for the configuration, until SW 1.07,
2	nc	
3	OPC Transmit	
4	nc	
5	GND	
6	nc	

7	RTS	bridged with CTS pin 8
8	CTS	bridged with RTS pin 7
9	VCC	power for GeoBase20 goes through

2.6.3. Configuration adapter

Up to software-version SW 1.07 a configuration adapter is required additionally in order to configure the GeoBase20 via the uplink-port. The interface-signals are shunted with the adapter so that a connection at a standard RS232 interface of a PC is possible. Prerequisite is however that the uplink Port also exists. The uplink cable must be connected. A radio-modem has not been connected! Appliances without this connection can be used only with the manufacturer-settings!

The adapter for the SATEL uplink cable has following construction:

DB15 socket, GeoBase side	DB9 socket, PC side
Pin 3	Pin 2
Pin 7	Pin 3
Pin 11	Pin 5

The adapter for the OPC uplink cable has following construction:

DB9 socket, GeoBase side	DB9 socket, PC side
Pin 1	Pin 2
Pin 3	Pin 3
Pin 5	Pin 5

3. Getting started and operation

3.1. Run out the initialization-process

After switching on the voltage of the GeoBase20, nominally 12VDC, 1A, first an internal system check is enforced.

The start-indication appears on the display:



In the next reading appears behind the „V “the current version-number of the firmware.

At the same time, the yellow connection-LED “st” begins to blink. This blinking marks the initialization-phase and finishes with the successful logging-in of the GSM Engine into the network. In the further operation this indication with continuously light marks an existing GSM connection.

Is at the uplink socket „up “a radio-modem connected, this is also switched on and served with the data from the data-entrance. In this phase, the data are transferred only over the radio-modem!

The display now shows the further initialization-steps. The upper line marks the current status; in the second line shows an exact description of the condition is.

The next initialization-step is shown as „COM Check “. Here a checkup of the internally used communication-ways takes place. Connected appliances are not taken in consideration!

The following step „INITIALISATION “marks the basic-initialization of the GSM engine. With this inscription, also the green registration LED „rd “ must blinks. Normally, the twinkle is visible however already earlier.

The next step leads to the checkup of that for logging into the network necessary PIN-code. To avoid a continuous retyping of the PIN-code during the configuration-mode, it is stored in a not re-legible form in the unit. If always the same SIM-card is used, the GeoBase20 can logging into the network immediately with the knowledge of the PIN-code. After changing the SIM-card as well as in the state of delivery first the right PIN-code has to be entered. The steps are described in the chapter „PIN-code changes “. The manufactures default is the pin-code „4444 “.

With the successfully PIN-code input the GeoBase20 now tries to have registered itself in the GSM-network. In this time the display shows in the second line the inscription „REG CHECK “. The upper line changes between „STATUS “and „WAITING “. According to the local conditions of the network provider and the use of the capacity of the GSM-network this state can last some minutes. Typical are times less than one minute however.

The phase of logging is shown with the blinking of the red power-LED „pw “. With the logging into the network the green registration-LED „rd “ switches into a continuously light. At the same time the two other LED's stopping its blinking.

Finally the internationally valid labeling of the used network provider is shown behind the inscription „OPERATOR “. In Germany only this two GSM900 operators are possible:

26201 = T-D1, 26202 = D2 Privat. The number can vary in foreign countries. Influence can be taken only conditionally on the logging in phase into a certain network. It is always tried to book into the network of the card-operator. If that is not possible, the „strongest allowed “network is used. Normally are these the „roaming “partners of the network provider. Is a preferred partner stored on the SIM-card however, it is also tried to use this. The selection of a partner as well as the storing of preferred partners isn't possible with the GeoBase20.

Below the operator-statement, finally the current reception-field-strength is shown in a qualitative form. Possibly are the values of 0 to 31 and the value 99. With values bigger than 10 stable connections are reached the statement 99 shows that the field-strength cannot be fixed. In the appendix an assignment of the numbers to concrete field-strengths can be found! The value of the field-strength is determined cyclically and allows a valuation of the dominating reception-circumstances. Sinks the field-strength to zero, the registration gets lost and the green registration-LED „rd “starts again to blink. Then it is to be taken care that a usable field-strength is reached again with a alteration of the location or realignment of the antenna since otherwise no GSM traffic is possible!

The GeoBase20 is now operational and can react to incoming telephone calls with the re-direction of the data-stream.



Each individual initialization-step is tested and must be completed successfully. Occurs an error in this phase the power-LED „pw “ switches into a red continuously light. In the display the statement „ERROR “ appears. The GSM-engine is turned off and the whole initialization-process is repeated after approximately 5 sec waiting time. Differently from it, with detecting a wrong PIN-code (i.e. no SIM-card, an untrue stored PIN-code, and not a 3 volts-card) the unit changes into the configuration-mode. In the configuration-mode, one can alter the PIN-code recorded in the GeoBase20 by help of a customary terminal-program. These alterations involve however only the PIN-code in the GeoBase20. No alterations are done on the SIM-card. Also a re-reading of the stored PIN-code is not possible. Further below the exact way for changing the PIN-code is described.

Make sure that the inserted SIM-card has the same PIN-code as the GeoBase20. After triple wrong input, the SIM-card is blocked and is to be free-switched accordingly lavishly again.

During the normal operation the power-LED „pw “ shows all 10 seconds a short red blinking. A red continuously light marks a system-error that restricts the functionality of the GeoBase20. Please check whether the cable-connections and the interface-settings are right. The power supply must have a sufficient dimension! If these measures should bring no remedy, you please turn to your specialist! The whole initialization-process is done after approx. one minute. Appearing errors extend this time.

3.2. List of optical signals

display/color	labeling	LED condition	meaning
power / red	pw	off	no power input, appliance not operational
		blinking each second	phase of logging into the GSM network
		blink all 10 seconds	normal operation, basic condition of GeoBase20
		continuously shining	- error in initialization (no PIN-code, internal error, no SIM-card etc) - configuration mode
connection / yellow	st	off	1) before logging into GSM-network: internal error 2) after logging into GSM-network: no data-connection
		blink < 1 sec.	1) before logging into GSM-network: configuration-mode 2) after logging into GSM-network: internal error
		blink all 2 sec.	1) before logging into GSM-network: initialization-phase 2) after logging into GSM-network: internal error
		continuous shining	1) before logging into GSM-network: internal error 2) after logging into GSM-network: data-connection
registration / green	rd	off	GSM engine without power
		blinking	GSM engine is powered, but not booked into the GSM-network
		continuous shining	GSM engine is booked into the GSM-network

3.3. Caller-signal

If the GeoBase20 is in the operational condition, the modem reacts to incoming data-calls. After pick up, a data-connection is established with 9600 baud. Is the „CONNECT “ done the yellow connection-LED „st “ shows an existing data-connection to a network-participant. On the display the text „GSM

Connect “ is visible. The incoming serial data will now distributed by the GSM-engine. From software-version SW 1.08 onwards the data will also be distributed via the „uplink-port “ to the radio-modem. Until version SW 1.07 the radio-modem is deactivated for the duration of the transfer, provided that it can be switched off with a control-command.

Not until with a hang-up by the caller the data are transferred via the radio-modem again. The yellow connection-LED „st “goes out then.

The GeoBase20 cannot interrupt the data-connection itself. But it reacts to each loss of the carrier-signal however and returns independently into the telephone call-readiness. An internal ‘watchdog’-circuit prevents that the connection is upheld also when serial data staying out temporarily. The period of time up to a hang-up can be set from approx. 5 to 50 sec. Are again data arriving before passing a waiting time the watchdog is put back on the initially-value. In the display the absence of data is shown with the inscription „No GPS Data “. After passing the waiting time without data the display shows „Terminate Call “. The GeoBase20 interrupts the existing connection, turns off the GSM-engine and books itself into the GSM-network again. This behavior is proven in that because in the GSM-network an active hang-up needs both participants. In the practice it happened repeatedly that the connection cutting (reduction) didn't take place completely if a one-sided ending occurs. A period of time of approx. 1 minute is to be allowed between two telephone calls. During this time the GeoBase can't react to any incoming calls!

3.4. Configuration-mode

Is the GeoBase20 in the configuration-mode it is possible to adjust the PIN-code to the settings of the SIM-card, which is essential for the logging into the GSM-network. The PIN-code is stored in the appliance non-volatile and not re-legibly and has to be adjusted only with changes of the SIM-card. No alterations are done on the SIM card! On the rear of the appliance a black button is beside the SIM-card holder. If this is pressed during turn on the power voltage, the GeoBase20 goes into the configuration-mode. After finishing the first initialization the button isn't interrogated any more.

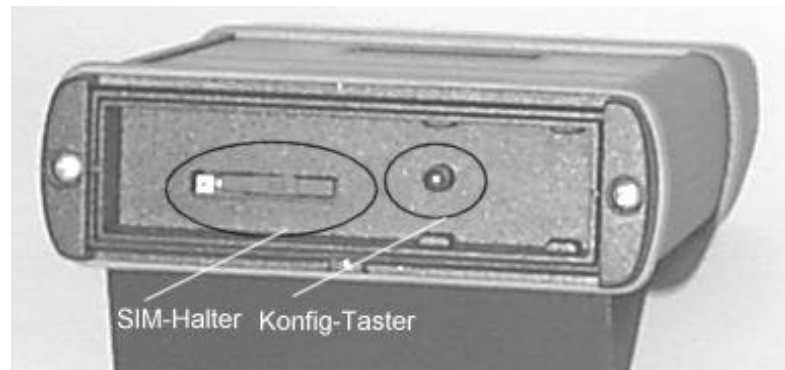


Illustration 8: backside view

3.4.1. Configuration via the uplink-port

With appliances up to the software-version SW1.07 the GeoBase20 is configured via the uplink-port. Beside the uplink cable an additional adapter, see section „configuration adapter“, is necessary to connect at a terminal-suitable appliance.

Following sequence is to guarantee:

1. Power supply for GeoBase20 must be turned off.
2. Put in the SIM-card.
3. Connect the configuration adapter (GeoBase side) with the uplink-cable connector
4. Connect the counterpart (PC side) with a PC or Notebook via a serial RS 232 interface.
5. Run a suitable terminal-program, for example HyperTerminal in Win98) and set following parameters:
 - TTY emulation,
 - 9600 Baud, 8 data-, 1 stop-bit, no parity, no Handshake,
 - **deactivating** of „transmitted characters ending with a line feed“.
6. Press configuration-button and switch on power supply for the GeoBase20.
7. Holding pressed until in the terminal-program an inscription of the type: ©IB ENZ SW:x.xx
>GEOBASExxxxxx < EW:x.xx appears. The version - and serial number is shown in this line. The red power-LED „pw“ shines. On the display also the appliance-name and the serial number will be shown.

3.4.2. Configuration via the Data- / Power-cable

From software-version SW1.08 onwards the Geobase20 must not longer configured via the uplink-port. The data cable can now used directly without further adapters. The wiring of the cable is designed to the direct connection at a PC. Following procedure is to be done:

1. Power supply of GeoBase20 must be turn off.
2. Put in the SIM-card.
3. Connect the data-/power-cable at the GeoBase20.
4. Connect the counterpart with a PC or notebook via a serial RS 232 interface.
5. Run a suitable terminal-program, for example HyperTerminal in Win98, and set following parameter:
 - TTY emulation,
 - 9600 Baud, 8 data-, 1 stop-bit, no parity, no handshake,
 - **deactivate** of „transmitted characters ending with line feed“.
6. Press configuration-button and switch on the power supply for the GeoBase20.
7. Hold pressed until in the terminal-program an inscription of the type: ©IB ENZ SW:x.xx
>GEOBASExxxxxxx <EW:x.xx appears. The version - and serial number is shown in this line. The red power-LED „pw“ shines. On the display also the appliance-name and the serial number will be shown.

3.4.3. Configuration-menu

After activating the configuration-mode the text „configuration!“ is shown on the display beside the serial number. Following menu appears in the terminal-window:

Auswahl (Selection):

Pin

Time

Ende (End)

By input the text „Pin“ or „Time“ or „Ende“ the sequence is continued. The input must take place under compliance of the exact spelling (capital /small letters) and will completed with the „ENTER“ key.

Menu „Pin“ (PIN-code):

Is the text „Pin“+ ENTER inputted the inscription „PIN eingeben: “ appears. It is exactly to input the pin stored on the SIM-card. Typing errors can corrected with the key „BACKSPACE “. The input is to complete with „ENTER”.

Warning: All ASCII characters will be accepted. It takes place no examination on obviously-ness.

Wrong PIN-code inputs can direct to the locking of the SIM-card. At most 5 characters can be inputted. At present, the network-operators use however only codes with 4 characters.

Following appears the inscription of the finally typed Pin-code again: „Neue PIN: xxxx “

Should not appear the regular PIN-code there the process is to be repeated.

Menu „Time“:

Behind this point hides the waiting time for the Watchdog in case of absence of data's. A selection between the numbers from 1 to 9 is possible. Each position represents a time of approx. 5-sec. One chooses the 0 here, is cut off less than 5 seconds in an accidental time. Already pauses of some milliseconds can also lead to a hang-up.

Menu „Ende“ (“End”):

With „Ende“+ ENTER the configuration-mode is left. As indication of leaving the text „Start in 10 sec.“ is shown. The GeoBase20 deactivate the GSM-engine. After the renewed switching on a logging into the network is undertaken with the new settings.

If the selection-menu should not appear in the described manner, again the „ENTER“ key is to press. Is there any success a Null- (X-) modem cable must be used. The wiring of the configuration-adapter is done to connect at a PC. Important are the settings described above!

The appliance doesn't return the entered characters as an echo. So that the inputs are visible on the screen, the necessary option must be activated in the terminal-program. Please refer to the respective program-description!

The configuration-mode is also activated if the PIN-code stored in the appliance differ with one of the SIM-card. The procedure is similar. In difference to the wanted starting of the configuration-mode the procedure stops in a waiting-state before this mode however. In the display the inscription „push button“ appears. Beside the red power-LED (duration-light), the yellow connection-LED marks this waiting-state with a very fast blinking. Now the black button on the rear is to press shortly in order to let appear the menu described above! The further procedure is analogous then.

Warning: With an inserted SIM-card and a negative PIN-code comparison already the first possibility for the regular PIN-code is used! The SIM-card is blocked after three faulty-attempts.

4. Error messages and problems

The GeoBase20 is laid out so that no feedback is passed out over the interfaces. In the version without display, the system-conditions are shown by the 3 front-side LED's. If the display exists, the condition can be pursued additionally on the basis of the visible indications.

If arising problems can't be solved with help of this manual; you please consult your dealer.

The appliance contains no service parts that make an opening of the appliance necessary!

5. Technical questions

If you should have technical problems with the assemblage, that doesn't clarify this manual, you please contact per telephone, fax or e-mail the following addresses:

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6. APPENDIX

6.1. Assignment of signal-quality to reception-sensitivity

display	reception-levels in dBm
0	-113
1	-111
2 ... 30	-109 ... -53
31	> -53

6.2. Specifications

Serial interface

Interface	RS232 with use of Rx/D, Tx/D,
Protocol	no, configuration with ASCII characters
Transfer-parameters	9600 baud, 1 start-bit, 1 stop-bit, no parity, 8 data-bits
Connection	Fisher connectors series 103 and 1031

Power supply

Tension	12 volts nominally minimally 10,7 volts, at most 14,4 volts,
Current	1A maximum
Current-reception GeoBase20	transmit working: on average 0.5 amps according to GSM network without radio-modem, current-peaks until 2 A for max. 570 μ s per 4,6 ms Standby: approx. 40 mA
Fusing	internal and external car-fuse
Verpolschutz	series-diode without reactivation-time

SIM card

Type	Mini SIM-card
Work-current	3 volts

Antenna

Type	GSM900 compatible
Connection	FME plug

General use-conditions

Working-temperature	- 10°C.... + 45°C
storage-temperature	- 25°C.... + 55°C
Humidity	5... 90% not condensing

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8. Imprint

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Important hint:

All information comprehended in this manual was composed with biggest diligence and after best knowledge. Nevertheless, mistakes are to be not excluded completely.

The engineer-office ENZ sees induce itself for this reason to it to point out it that the engineer-office ENZ can adopt no legal responsibility or any liability for consequences that go back to incorrect statements.

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