ALPHA Tech

G S M G A T E

MiniGate *A*

Installation guide V 1.0

Basic features:

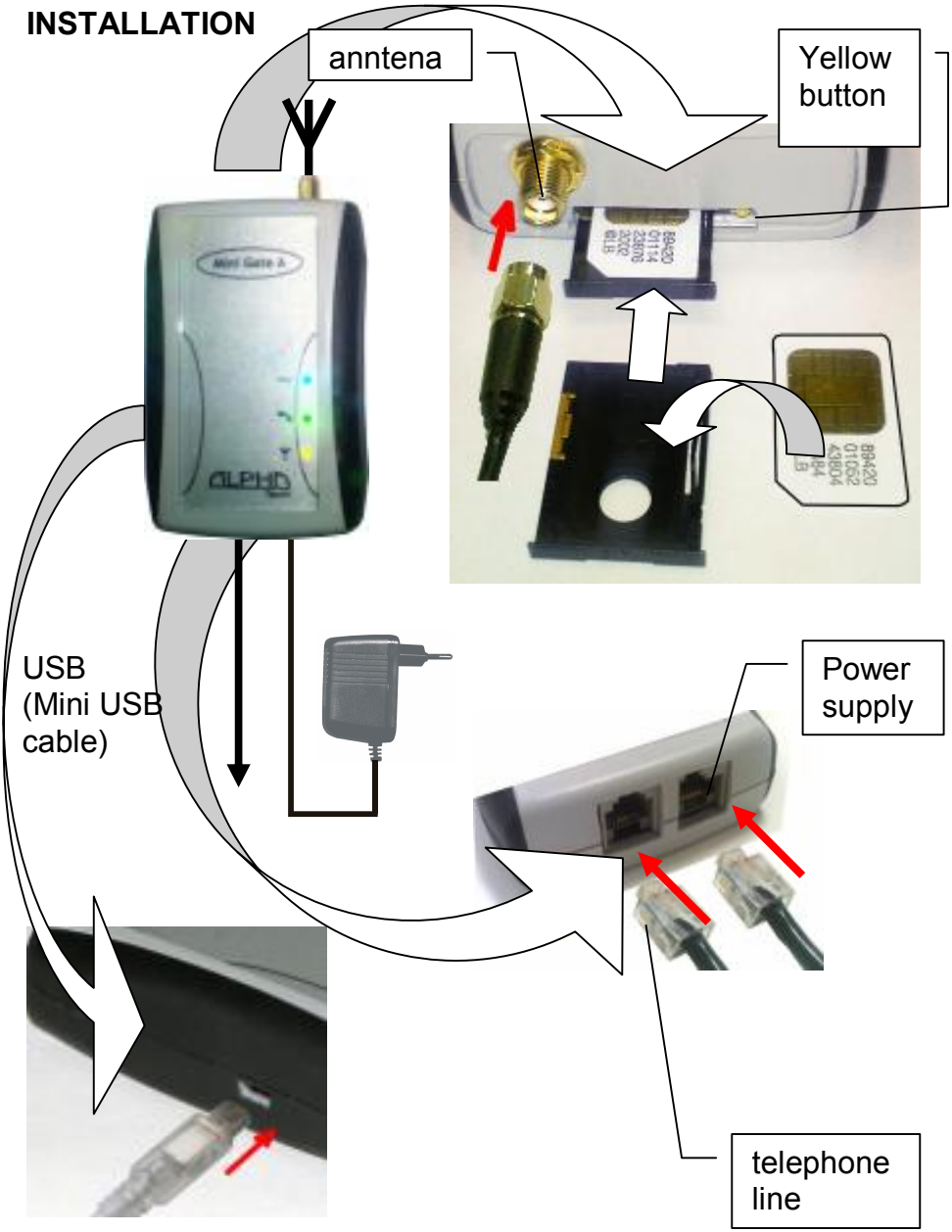
Mini Gate A is dual band GSM Gate based on Siemens GSM module TC 35 (eventually MC 55) equipped by a lot of adjustable features increased comfort of service. It has been designed for GSM network 900 MHz as same as 1800 MHz.

- Polarity reversal of telephone line allows exact detection of start and end of call.
- CLIP support all ordinary protocols and allows send not only incoming call number but also name (when is saved in phonebook).
- Call billing allows control exact call duration due tax pulses 12/16 kHz (1. pulse when outgoing call is picked up).
- Beeps in minute period into the call allows easy identification of GSM call.
- Integrated USB port with PC software allows you easy configuration as same as sending and receiving SMS messages (via SMS mail sw)* or data transmission.

*option

Thanks of many Mini Gate features you can satisfy very wide group of customers. By setting of permitted numbers to memory of Mini Gate you can restrict unrequested calls (to public numbers).As same as you can set Mini Gate to provides incoming calls only.

INSTALLATION



By pressing of yellow button release the SIM card holder. Insert the SIM card and replace the SIM card holder. **Before inserting the SIM card we recommend checking at various mobile phone state of the SIM card (logging with or without PIN, PIN, etc.) and set logging without PIN. When you want logging with PIN you have to preprogrammed this PIN and set logging with PIN (via table of programming).Without this setting the Gate wont work**. **DO NOT FORGET ANTENNA CONNECTION**! The available place for installation select up following point of view:

1. distance from PBX – possibility of GSM interferences to other PBX lines as same as lenght of line from Gate to PBX (max. 200m)

2. main 230 V for power supply of Gate

3. Quality of GSM signal at the installation place of GSM Gate

Quality of GSM signal

The sound quality depends on BTS setting where you are connected by the Gate. To find best place for antenna mounting you can use either mobile phone or feature 29 (table of programming). The suitable signal power is 3 scales of mobile graduation.

To check and find best position from GSM signal point of view you can use also GG SET (configuration sw). More in manual for GG SET.

Connection of antenna

When you connect magnetic antenna keep on mounting at bigger iron subject. This subject makes „against-weight“ at its depends the power of radiated signal

When you inserted SIM card as same as all cables are connected (**do not forget that Blue gate is connected on external line not on extension**) connect device to main 230V. The blue LED of „power supply„ is light up within 10 sec. After a while will flash a few times unregularly yellow LED (GSM network registration). Tle CPU then waiting for communication to GSM module (via LED table – communication off). After cca 30 seconds the yellow LED start flashing up GSM signal strength (via LED table).When pick up connected analogue phone or call to Mini Gate from PBX the LED of analogue line lights up (green LED). In the phone is hearing dial tone of Mini Gate. It is ready to use.

The most often problems during Blue Gate compact installation:

- All LED is not lighting.Problem in power supply. Check connection to main 230V as same as connection of adapter to Mini Gate.

- The LED “power supply” lights. When you make connection to Gate green LED is ON and in handset you hear busy tone. Yellow LED flashing in period „GSM modul doesnt communicate with CPU“. During work with USB could be programmed fix communication rate for GSM modul. Use USB to programm rate on „autobauding“.

- The yellow LED flashing in period „PIN unreadable“. After calling to Mini gate you get busy tone. The SIM card requires PIN, which is not preprogrammed or is preprogrammed wrongly.

- The LED „communication to GSM„ is flash shortly one for 2 sec. After calling to Mini Gate you are hearing busy tone. Mini Gate is not log into GSM network – bad signal.

- The yellow LED „communication to GSM„ is flashing up signal strength“. After calling to Mini gate is not light up green LED is not light up and in analogue phone is quiet. It interrupted conduction of analogue line or so much big resistance in current loop (for example:(longer cabel between PBX and Mini Gate).

- Tle yellow LED „communication to GSM„ is flashing up signal strength“ as same as green LED lights up. Tle PBX hold „pick up“ line of GSM Gate. By incoming call you can remove this issue. In other cases check PBX manual.

- The Mini Gate works but call is disturbed by interference. Incorrect position of antenna against telephone line. Change antenna position.

Note:.
Default you make by parametr 99 in programming mode (via programming table at page 11).
Alle LEDs flashing as same as tone types are mentioned in tables at the end of manual.

USB

The Gate is equipped by USB port for direct control of GSM module Siemens TC35 (or MC35 or MC39 for GPRS) via virtual COM port. The Gate you can further use ordinary GSM modem for data transmission, internet connection or for SMS messages.

When unit is working as GSM modem then is busy for voice connection. When you pick up the line you will hear busy tone. The unit is monitoring data transmission by modem. The data transmission can not be permanent therefore the unit stays in data mode 10 seconds after finishing of data transmission. Then is going back to Voice mode (calling).

The same is when you are calling over unit. It is busy for data transmission.

The optional sw supply to unit for sending and receiving SMS messages is SMS mail. It is working under Outlook, Outlook Expres, Opera etc. And you can work with SMS as with normal e mails. (see manual for SMS mail). It works in batches and allows programm communication interval (1 to 99 minutes) to Mini Gate for sending and receiving SMS. Due this we avoid situation that unit is permanentlky blocked by data mode for voice communication.

Further functionality of USB is monitoring Mini Gate operation. It is possible record even incoming calls includes time and CLIP, signal strength, etc..

CONFIGURATION

The programming mode is set after acknowledgement dialing to Blue Gate.In the analogue phone is waiting tone. After password inserting is tone changing to programming tone. Then you can programming each features of Blue Gate (via table of programming)

Progress of programming:

- ❶ Dial 2 digits number of programming feature.
- ❷ Dial 1 to 4 digits number for feature value programming.
- ❸ Wait for a tone of confirming request (3 short tones).
- ❹ Confirm the feature by dialling acknowledgement (#)
- ❺ Wait for confirming tone.
- ❻ Follow programming tone again.
- ❼ Finish programming by hang up a phone.

***Example*: programming of new permitted fix numbers (02) to memory 09:**

Dial acknowledgement (default is #). In phone you are hearing waiting tone (▌—▌—▌—▌—). Dial password (default 0000). Waiting tone is changing to programming tone (▌—▌—▌—▌—). Dial 1902. Wait for tone of confirming request (3 short tones). Confirm the feature by dialling acknowledgement (#). Wait for confirming tone (one long tone). Finish programming mode by hang up a phone.

Warning: **After dialling of parametr value you have to wait for 3 short tones and then dial acknowledgement # . Wait for long tone confirm acceptation of this parametr .**

Notes to each parametres:

11 – 19 When you programm some prefixes the Mini Gate allows outgoing calls starts by those prefixes only. The others will get busy tone. When memories will be empty the calling wont be restricted (default). Memory of prefixes can content 1 digit only. If you insert 1 digit only the Mini Gate will check first position only.

Rewriting of memory – by storing of new fix-numbers are old fix-numbers erased.

Erasing of memory - Memory you will erase by storing of „nothing“. You dial only number of memory which you want erase and confim it.

22 very important feature is acknowledge character setting. Default is #. When is # used for PBX features you can change it on *.

24 An analogue phones are not enable send „+„ which is very used in GSM. In this case is possible to use combination „00„ to send it to mobile phone.

31 This feature identificated connection of Mini Gate to external line at some type of PBX (ex.:Siemens Hicom).

29 This feature is used for searching of antenna best position. After feature activation you get tones immediatelly. You end the feature by hang up.

32,35 The GSM phones requested command to connection on inserted number. The BLUE GATE will send a command immediately after acknowledge character dialling (#).

Notes:

- Programming is only by tone dial DTMF. Dont forget set even external line at PBX.
- Changes are valid after hang up only (finishing of programming mode). It is very important especially in acknowledge character changes- till hang up you must use previous acknowledgement.

- **After numbers dialing you must wait for confirming request , insert acknowledge character and wait for confirming tone. When you insert acknowledge charater before wont be accepted**.

- Switch to programming mode is possible even in busy tone.

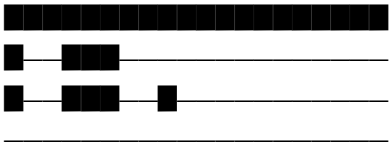
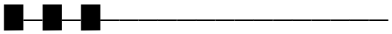
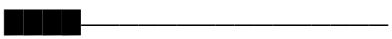
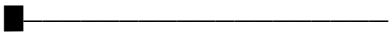
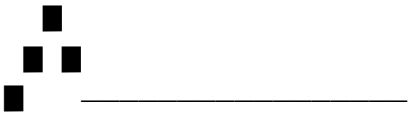
Table of programming

Dial number						Feature	Default			
0	0	n	n	n	n	Password nnnn to programming mode access	0	0	0	0
1	1	n	n	n	n	Memory x for permitted fix number (1 to 4 digits)				
1	2	n	n	n	n					
1	3	n	n	n	n					
1	4	n	n	n	n					
1	5	n	n	n	n					
1	6	n	n	n	n					
1	7	n	n	n	n					
1	8	n	n	n	n					
1	9	n	n	n	n					
2	1	n				Reversal polarity n=0 OFF n=1 ON	0			
2	2	n				Acknowledge character setting n=0 - # n=1 - *	0			
2	3	n				Type of dial tone n n=0 – permanent tone n=1 – dial tone up table of tones n=2 - dial tone of public lines operator n=3 - quiet	0			
2	4	n				Turning on combination for dialling „+„ to mobile phone n=0 – combination turn off n=1 – sending „+„ to mobile after „00„ dialling	0			
2	5	n				Signalization to the call – short tone each minute n=0 – tone is turn off n=1 – tone is turn on	0			
2	6	n				Restriction of call duration n=0 – without restriction n=1 – call duration restricted at 10 minutes	0			
2	7	n				PIN n=0 – start without PIN n=1 – start with PIN	0			
2	8	n				Type of acceptable dial of telephone number n=0 – tone and pulse dial is acceptable n=1 – pulse dial is acceptable only n=2 – tone dial is acceptable only	0			
2	9					Indication of signal power. Power is indicated by frequency of short tones. Max. frequency is 5/ sec.				
3	1	n	n			Ringing after inicialization nn decimal of sec. (00 to 99 it is 9,9 sec) („00„ not ringing during inicialization)	0	0		
3	2	n	n			Waiting for last number nn sec. (01 to 15) (after finishing of dial by acknowledge character is sending immediately)	0	6		
3	3	n	n			Waiting nn sec. for dial after pick up (00 to 99 it is 9.9 sec) („00„ waiting is not limited)	0	0		

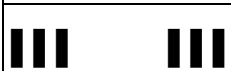
3	5	n	n			Number of dialled numeral, after its is dial send immediatelly (lenght of telephone number) nn=00 – function none active nn=01-19 – number of numeral telephone number	0	0		
3	6	n	n			Ignoration of dial nn decimal of sec. After picking up nn=00-99 decimal of seconds	0	0		
3	7	n	n	n	n	Storing of PIN				
3	8	n				Amplification of sound in outgoing direction (1 to 4)	1			
3	9	n				CLIR feature, switching OFF outgoing CLIP (#31#) n=0 OFF n=1 ON	0			

7	1	x	x	y	y	Xx= 00 No charging pulses Xx= 12 12 kHz charging pulses Xx= 16 16 kHz charging pulses Yy= 00 1 pulse only at the moment of connection Yy= 01 to 99 seconds. Pulses each 01 up 99 seconds	0	0		
7	3	n				N= 0 CLIP is switch OFF N= 1 FSK CLIP Bell N= 2 FSK CLIP BT N= 3 DTMF CLIP	1			
7	4	n				Call progress tone n=0 – OFF n=1 - ON	0			
7	5	n				Roaming n=0 – prohibited n=1 - permitted				
9	9					Default setting				

Table of tones

	**Dial tone (up setting)** Mini Gate is ready to accept dial
	**Busy tone –** short tone repeated Called part is busy, doesnt exist, not permitted, etc..
	**Ringing tone** – long tone and pause repeated Called part is ringing
	**Waiting tone** – short tone repated with quick cadence. Mini Gate waiting for password insert
	**Programming – short tone with quick cadence** í Programming mode of Mini Gate
	**Confirmation inquiry** - 3 short tones Inquiry to confirm inserted parametr
	**Confirmation tone** – long tone Parametr was saved correctly.
	**Minute tone** – short tone with 1 minute period Minute beep to inform about GSM call.
	**Call progress tone** – short tones with different frequency Searching of called part.

LED signalling

		**Permanent light** (lights up after 3 sec after power connection) Power supply of unit
		**Permanent light** line OFF HOOK
		Doesnt light line ON HOOK
		**Flashing in rhytm of busy tone** Programming or PC connection mode
		**Flashing in 2 sec. period** SIM is unreadable (for example: wrong PIN, SIM not inserted,etc..)
		**Short lights off with period 2 sec.** GSM modul doesnt communicate to CPU
		**1- 5 flashes with period 4 sec.** stand by mode. Number of flashes = signal strength
		**Short flashes in period 2 sec.** Gate is not registrate to GSM network
		**Quick flashing with different period** GSM communication, logging to net, call, data connection

Technical parametres:

Type	Mini Gate A
Operating position	various
Operating conditions	temperature: +5° C ÷ +40° C, humidity: 10% ÷ 80% at 30° C
Dimensions (mm)	
Weight	

Part of power supply

Supply voltage	230 V (±10%) (adapter)
Power input	max. 15 VA
Protection	thermal fuse in adapter
Safety group	ČSN EN 60950 group 2

Analogue telephopne line

telephone interface	2-wires
telephone conector	RJ 11
Impedance	600 Ω ± 20%
Dial	tone DTMF t_t > 30 ms Pulse 28-200:20-200ms
Billing	12/16 kHz
Start and end of connection	Polarity reversal
Supply conduction	symetrical 24V
Current loop	max 38 mA
Resistance of subscribers conduction	max. 500 Ω
Ringing	55 V_{ef} / 50 Hz
Signalization	425 Hz ±20Hz
CLIP	FSK Bell, BT,DTMF

GSM:

mobile network	compatible for GSM 900 and GSM 1800
provider	according SIM card (3V and 1.8 V)
USB	version 1.1, virtual COM

Functionality:

- Waiting for dial after pick up 1 - 99 sec or unlimited
- Waiting for last digit of dial 1 - 15 sec
- Dial after preprogrammed number of digits 1 - 19
- Immediate dial sent up setting „#“ or „*“
- Permitted direction (9 memories of 4 digits numbers)
- Dial type setting
- CLIR
- CLIP
- Call billing (tax pulses 12/16 kHz)
- Reversal polarity (start and end of call)
- Roaming ON / OFF
- Call duration control
- Time beeps in call
- GSM signal strength identification

CZ

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