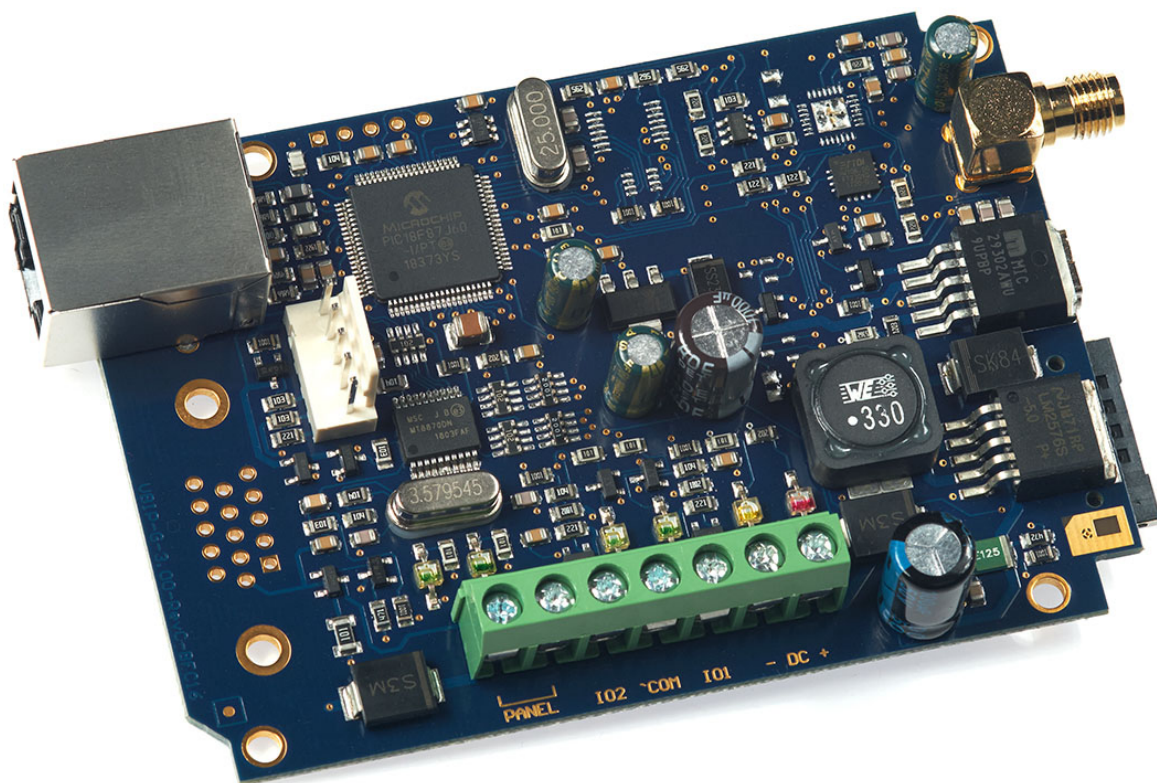


VBIP-G



Mobile Communicators

GPRS (2G), WCDMA (3G), LTE (4G)

Installer Manual

Rev. 2018.08.14.





V 3025

TREZOR TEST s. r. o.
Na Vršku 67, 250 67 Klecany

CERTIFICATION BODY No. 3025
ACCREDITED BY
THE CZECH ACCREDITATION INSTITUTE

CERTIFICATE OF CONFORMITY

Registration number: TT- 302/2018

for

VILLBAU Security Ltd.
Üllői út 611, H-1182 Budapest, Hungary

PRODUCT
(identification):

IP & GPRS communicator
type VBIP-G
Producer: VILLBAU Security Ltd.
Üllői út 611, H-1182 Budapest, Hungary
CZ-CPA 27.90.11

CLASSIFICATION
(of the product):

The product in accordance with the certification scheme 1a EN ISO/IEC 17067:2013

and in conformity with requirements of

EN 50131-1:2006, EN 50131-3:2009, EN 50136-2:2013,
EN 50131-10:2014, EN 50136-1:2012, EN 50131-6:2008

Security Grade 3, Environmental Class II SP5 (GPRS, LAN) a DP4

The certificate is issued on the basis of the certification report no. CE 71/2018 its within the accreditation according to the certificate no. 234/2018 of 10 May 2018 issued by the Czech Accreditation Institute.

Chairman of the Certification board
CO No. 3025
Ing. Oldřich UHLÍŘ

Deputy chairman of the Certification board
CO No. 3025
Ing. Daniela ČÍŽKOVÁ

Date of issue: 09. 08. 2018



Date effective: 09. 08. 2018
Valid till: 09. 08. 2021

This certificate can be used and duplicated only unchanged and with all enclosures.

DECLARATION OF CONFORMITY

(in accordance with 93/68/EEC)

We, **VILLBAU Security Systems Ltd.** (1182 Budapest, Üllői út 611., HUNGARY) declare, that the following products:

| | |
|----------------|------------------------|
| VBIP-G | GPRS/GSM communicator |
| VBIP-3G | HSPA/UMTS communicator |
| VBIP-4G | LTE communicator |

are in conformity with the following EU directives:

| | |
|-------------------|-------------------------------|
| 2014/30/EU | Electromagnetic Compatibility |
| 2014/53/EU | Radio Equipment Directive |
| 2011/65/EU | RoHS2 Directive |

The products named above comply with the requirements of these EU Directives by meeting the following standards:

| | |
|--------------------------------|--------------------------------------|
| EN 55011:2009+A1:2012 | RF Emission Standard |
| EN 50130-4:2011 | Electromagnetic Immunity |
| EN 50130-5:ed.2 | Environmental Class II |
| EN 50131-1:2006+A1:2008 | Intrusion Systems |
| EN 50131-3:2009 | System Security Grade 3 |
| EN 50136-1:2012 | Alarm Transmission Systems, SP5, DP4 |

We hereby declare that the products named above has been designed to comply with the relevant sections of the above referenced standards and specifications. The units comply with all essential requirements of the directives when installed and used as per manufacturer's instructions. This declaration is based on the following reports:

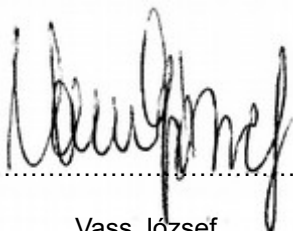
| | |
|----------------------|-------------------|
| Organization: | Abegu a.s., L1184 |
| Report Nr. | P/18/01/51 EMC |

| | |
|----------------------|------------------------|
| Organization: | TESTALARM Praha Ltd. |
| Report Nr. | 6345 9354, TAP-24/2018 |

The technical documentation supporting this declaration is available at the above address for inspection by the relevant authorities. The products are marked with the CE mark.

In case of any change made to the instruments without the written permission of VILLBAU Security Systems, including any hardware or software changes, or the improper use of the instruments, this declaration should be considered void.

Budapest, 14th August 2018.



Vass József
a VILLBAU Kft. képviselőjében



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1. INTRODUCTION

The VBIP-G Mobile Communicators are recommended for security installations, where the reporting to Alarm Monitoring Service providers (AMS) has to be made over Ethernet and/or mobile networks. The main reporting channel is the Ethernet network, and the GPRS, WCDMA (HSPA/UMTS), or LTE mobile internet network. On 2G devices GSM call can be used as a backup. For all ways, a primary and a secondary channel can be given. The secondary channel can be used as a backup, or for parallel reporting (double reporting). The VBIP-G communicators provide a reliable and secure solution for event reporting over the internet, at an unbeatable price/performance ratio.



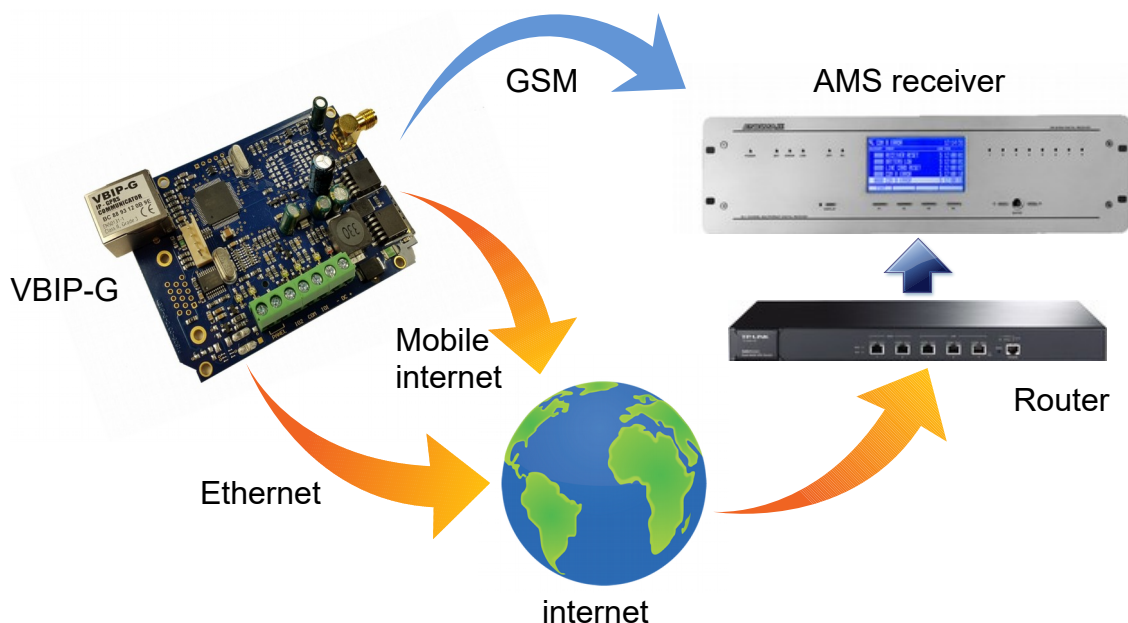
To be able to use and understand all the features of the VBIP-G series communicators, please, read this *Installer Manual* carefully.



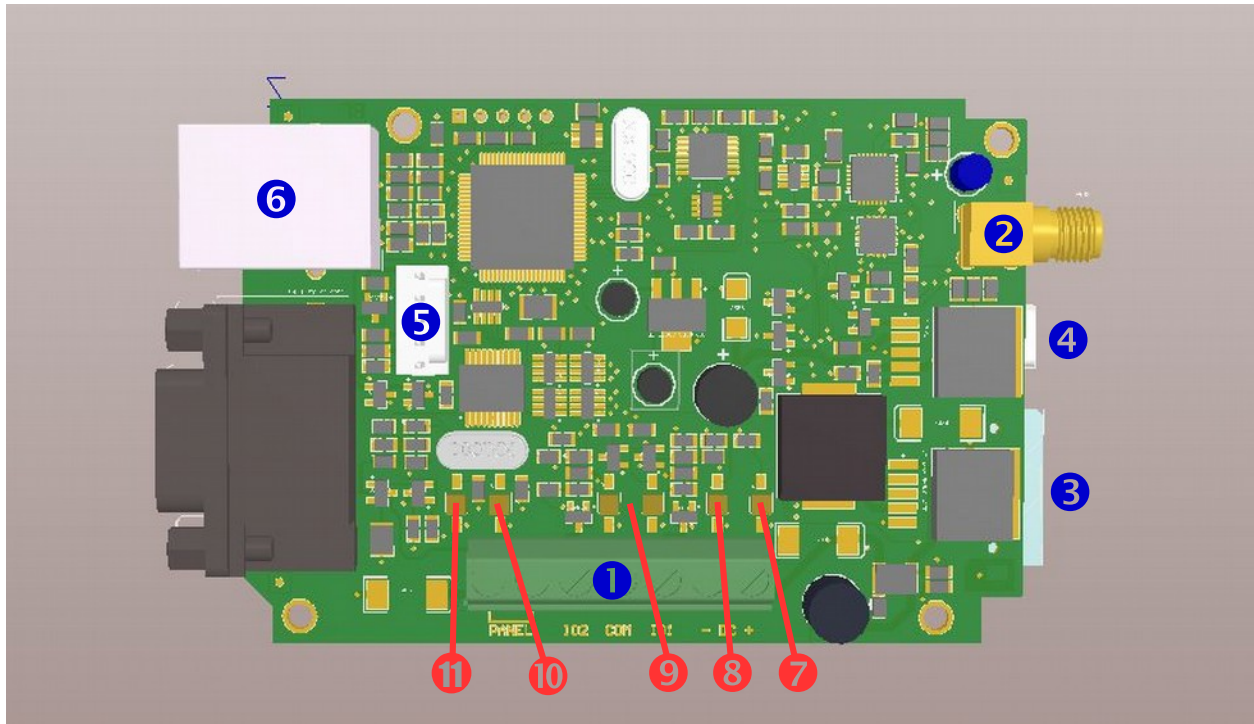
SAFETY NOTICE! Please, take care of installing and using this product according to the instructions and procedures detailed in this manual to ensure proper product safety.

2. SYSTEM OVERVIEW

The VBIP-G communicator receives the messages from the telco interface of the security control panel, in Contact ID format, and forwards these through the wired or mobile internet network or cellular network to the Alarm Monitoring Service central.



3. OVERVIEW



- ① Terminal block for connections (VBIP-G and VBIP-G-3G)
- ② Antenna socket (SMA)
- ③ SIM card holder
- ④ USB connector for programming and debugging
- ⑤ Serial connector, for IO-84 and Secolink connection, or programming
- ⑥ Ethernet connector (10-Base T)
- ⑦ Power/Signal LED (LED-1)
- ⑧ Trouble LED (LED-2)
- ⑨ I/O indicator LEDs (LED-3 and LED-4)
- ⑩ Mobile Comm LED (LED-5)
- ⑪ Ethernet Status LED (LED-6)

4. LED INDICATORS

LED-1: Power/Signal LED

In case of proper power supply, the LED-1 lights continuously, and indicates mobile network signal strength by slow flashes in every 10 seconds:

| | |
|---------------------|----------------------------|
| <i>0, 1 flashes</i> | no / weak signal level |
| <i>2, 3 flashes</i> | medium / good signal level |

If the power supply to the communicator fails, (falls below 10 V DC), the LED-1 will flash fast. In case the power supply restores (raises above 12V DC), the LED-1 will return to normal operation. During programming, the LED-1 flashes slowly.

LED-2: Trouble LED

Provides general fault signal

| | |
|-------------------------|--|
| <i>no light</i> | No trouble condition, proper operation. |
| <i>continuous light</i> | The configured reporting channel has physical problem (e.g. no SIM card) |
| <i>flash</i> | Unsuccessful reporting attempt on one or all reporting channels |



If LED-1 and LED-2 flash promptly alternating, it indicates that these is no reporting channel has been properly programmed. During firmware upgrade of the unit the two LEDs flash alternating slowly.

LED-3: IO-1 indicator LED

LED-4: IO-2 indicator LED

LED-3 and LED-4 show the status of the I/O #1 and #2 of the communicator according to the selected operating mode (input or output).

| | |
|-----------------|--------------------------|
| <i>light</i> | Input or output active |
| <i>no light</i> | Input or output inactive |

LED-3: Mobile Comm LED

Indicates the status of the mobile internet connection

| | |
|-------------------------|--|
| <i>continuous light</i> | Mobile internet connection is OK |
| <i>no light</i> | Initiating mobile internet connection, or no SIM card, or no mobile channel is programmed. |
| <i>flash</i> | Some or all mobile internet channels have failed to report properly to the AMS central. |

LED-6: Ethernet Comm LED

Indicates the status of the Ethernet connection

| | |
|-------------------------|---|
| <i>continuous light</i> | Ethernet connection is OK |
| <i>no light</i> | No Ethernet cable connected, or the connected router does not support 10-Base T connection link. |
| <i>flash</i> | Some or all IP channels have failed to report properly to the AMS central, or device is not properly configured on the local network (Router or DHCP failure) |



If the Ethernet cable is connected to the module, and it could be properly configured on the local network, LED-6 will light even if there are no IP reporting channels are configured. In this case, the device will still be accessible on the local network for remote programming.

5. GENERAL RECOMMENDATIONS

The VBIP-G communicators can report to AMS servers via the Ethernet and/or mobile internet network. A primary and secondary reporting channel for all communication media. Furthermore, email and SMS sending is available for notification purposes.



The VBIP-G communicator uses a special DTMF format for GSM reporting which guarantees problem-free transmission over the GSM audio line. However, due to that, GSM reporting can only be used with a compatible **ENIGMA II receiver** only!

The priority of the communication channels corresponds to their number – so reporting on the lower number channel is in priority over reporting on higher numbered channels. The communication channels are as follows:

| | |
|-------------|------------------------------------|
| CH1 and CH2 | Ethernet (IP) channels |
| CH3 and CH4 | Mobile internet channels |
| CH4 and CH5 | GSM channels (if available) |
| CH7 | E-mail notification (if available) |
| CH8 | SMS notification |



When using Ethernet (IP) reporting, the internet connection is provided for the communicator by the local router. To ensure problem-free reporting, it is recommended to provide uninterrupted power supply for the router.



The average mobile data usage of the VBIP-G communicator is estimated at 5-6 MB/month. This value can depend on the frequency of the test (keep-alive) signals. Please, use a SIM card with at least 5-10MB/month data plan.



If the protection of the SIM card is not required otherwise, it is recommended to switch the PIN code request of the SIM card off.

The operating mode of the communicator determines, how the available communication channels will be actually used for event reporting, so which channels are used as primary and for backup. The available options are as follows:

1-2-3-4-5-6 mode (default)

In this mode, the communicator sends the event to the first available server, according to the priority of the available channels. Upon success, no further reports will be made.

1-2; 3-4; 5-6 mode

Using this mode, the events will be reported on available IP, mobile internet and GSM channels as well, even if reporting to any of these has been successful. E.g. it will report the event over mobile internet even if it has already been reported over IP.

1-2-3-4 Pass-Through mode

This mode is very similar to the first one, but with an important difference. In this mode, the event received over telco interface will be acknowledged to the control panel AFTER the event has been successfully reported to and acknowledged by the server. This method is slower, but provides in most cases more reliable reporting. The GSM channels (CH5 and CH6) cannot be used in this mode.

1-3-5; 2-4-6 mode

This mode can be used, when the events has to be reported to two independent AMS. An IP, mobile internet and GSM channel can be used for each AMS server.



In all operating modes, the number of reporting trials on mobile internet and GSM channels is limited, to keep data traffic at a reasonable rate. After 4 unsuccessful communication trials the reporting will be suspended on the given channel until another event is to be reported, or the next channel test is due. Reporting trials on the ethernet (IP) channels is not limited in any ways to ensure, that the communication restores in shortest possible time, after the cause of the problem has been eliminated.

The VBIP-G communicators are connected in most cases to the telco interface (TIP and RING terminals) of the security control panel. When connected to the telco interface of a security control panel, the following might be considered:

- Telephone communication should be enabled for the security control panel
- DTMF (Tone) dialing must be set
- A telephone number must be set for reporting
- A user account must be set for reporting (do not use '0' digit, if possible)
- Contact ID (all codes) format must be selected
- It might be necessary to turn off Telephone line monitoring (TLM) option
- It might be necessary to turn off dial tone detection
- For some control panels, the „Force Dialing“ option must be set.

The communicator receives the reports over its telco interface, and forwards the messages to the AMS central.



If the events cannot be reported on any of the programmed channels, the communicator will suspend receiving further events on the telco interface until the communication with the servers has been restored.



If there is a failure in the operation of the communicator, the „Debug“ mode can be used to identify the cause of the problems. More information at „Troubleshooting“.



In case resetting of the communicator is necessary, this can be done by sending the **#<password> reset** SMS command to it. (<password> is the *SMS Programming Password* parameter, its default value is 1234).

6. PROGRAMMING THE COMMUNICATOR WITH PC

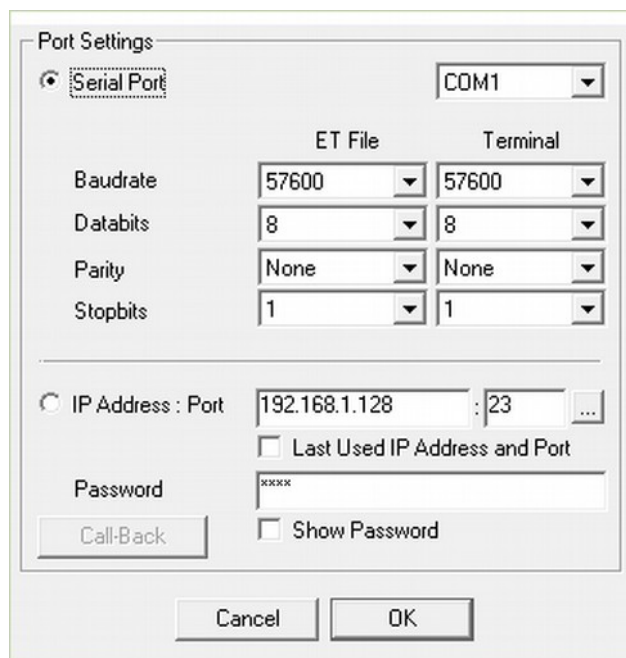
The VBIP-G communicators can be programmed via the USB connector (virtual serial port). For programming, please, use the *EniTerm* software.



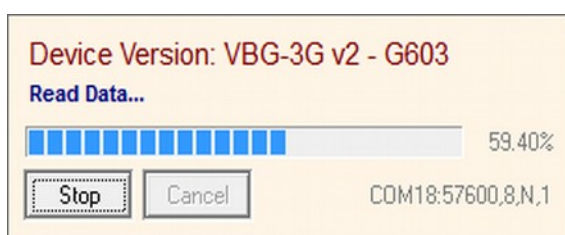
The VBIP-G communicators are supported from EniTerm version 2.30. It is always recommended to check the latest available software version before programming. The latest version of the EniTerm software can be downloaded at www.villbau.com, for free.

The programming steps are as follow:

1. Connect the VBIP-G communicator to the PC with a mini-USB cable.
2. Start *EniTerm*, then open the proper device file, and select product type:
 - VBIP.ET – VBIP-G programming
3. Set the COM port for programming in the *Communication / Port Settings* menu. The password for programming is „1234“ by default.



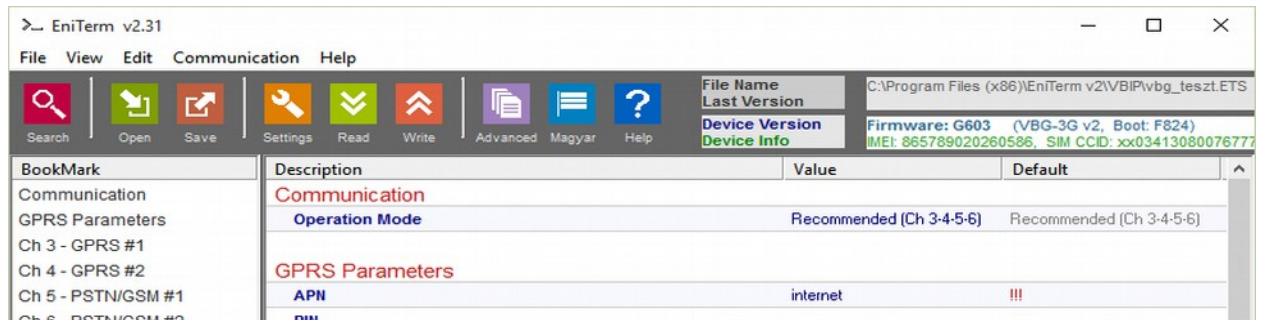
5. Read out current settings from device, by clicking on *Communication / Read* button.



The firmware version of the device can be interpreted as follows:

- G – 16 (year – 2016, alphanumeric)
- 6 – 6 (month – June, hexadecimal)
- 03 – 3 (day – the third)

6. Set the parameters in *EniTerm*, as needed. In case you have used VBIP or VBIP-G communicator before, then you might realize, that the options are similar, but only channels 3,4,5, and 6 can be accessed.



The short description of the options, that can be set in EniTerm, can be found by right-clicking on them in the UI.

7. When all the required options and parameters have been set, these can be downloaded to the device by clicking on *Communication / Write*.

8. The commonly used settings may be worth to save on the PC as a template for programming communicators. This can be done at *File / Save* menu. The previously saved settings can be reloaded later by using *File / Open* menu.

7. TROUBLESHOOTING



If there is any problem with the communicators it is always recommended to upgrade their firmware to the latest available version, as this could solve most problems.

SYMPTOM: No connection between the VBIP-G and the PC during programming

SOLUTION: Check the USB cable connection at the PC. Check the Device Manager in Windows, if the driver for the USB serial port is properly installed, and the virtual serial port (COM) appears in the device list. Check, if the EniTerm software is set to the same COM port.

SYMPTOM: The Ethernet LED (LED-6) is flashing, no communication goes to AMS

SOLUTION: Check, if the IP channels are programmed properly. Check if the LAN parameters are programmed properly, and the device gets a valid IP address on the LAN. Check if router supports 10-Base T communications.

SYMPTOM: the settings of VBIP-G seem to be ok, but no communication goes through to the AMS central.

SOLUTION: Check the IP address and port settings for the AMS server. Check the APN settings. Turn off PIN request at the SIM card, using a mobile phone. Check if there is proper cellular signal level. Check, if the mobile internet service is available for the SIM card – use it with a mobile phone, and verify internet connection.

SYMPTOM: The control panel cannot send messages to the VBIP-G communicator.

SOLUTION: Check, if the control panel is programmed properly – reporting is enabled, set to tone dialing, a proper account code and phone number is set, and Contact ID is selected as reporting format.

SYMPTOM: The control panel shows Comm Fault

SOLUTION: For some control panels it may required to disable TLM and/or dial tone detection. In some cases,

The VBIP-G communicator can provide the following error messages (examples):

1354 012 99 = Ethernet cable is not connected

1354 034 99 = SIM card not present

1354 999 99 = Comm Trouble between the VBIP-G and the control panel

1354 001 99 = Comm Failure on channel IP #1 (Ethernet)

1354 003 99 = Comm Failure on channel Mobile Internet #1

1354 006 99 = Comm Failure on channel GSM #2

1354 000 99 = Comm Failure for all channels in 3-4-5-6 mode.

1354 020 99 = Comm Failure for channels 3 and 4 in 3-4; 5-6 mode.

1354 100 99 = Comm Failure for channels 3 and 5 in 3-5; 4-6 mode.

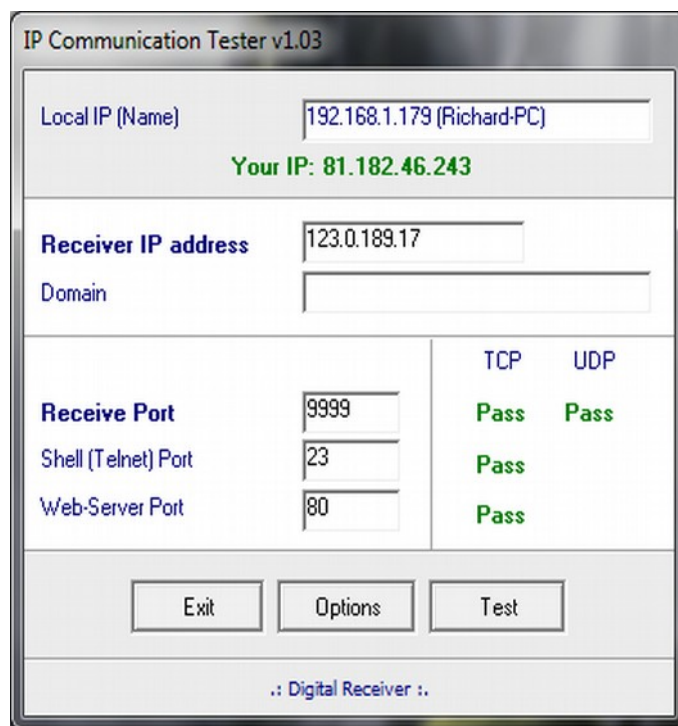
1354 200 99 = Comm Failure for channels 4 and 6 in 3-5; 4-6 mode.

8. TESTING AMS SERVER CONNECTION

In case of eventual communication failures, when it is suspected, that the communicator cannot access the server of the AMS central, it can be useful to check server availability on the public internet network. For testing the software IPT.EXE can be used.



The IPT.EXE can be downloaded from the www.villbau.com site, for free. The file does not have to be installed, can only be run, as is.



1. The IP address or domain name of the AMS server must be set.
2. The ports for accessing the AMS server must be set as follows:
Receive port – for event reception, Telnet port – for remote programming, Web-server port – for browser-access
3. Clicking on Test button, the software checks the available ports, and indicates Pass or Fail status.
4. More settings can be done at the *Options* menu:
 - *Enable TCP Test Report* = TCP connection testing
 - *Enable UDP Test Report* = UDP connection testing
 - *Invisible TCP/UDP Test* = The test event used for checking connection will not be displayed on the receiver
 - *Enable AES Crypted Test Report / AES Key* = AES encryption testing

9. FIRMWARE UPGRADE



It is recommended to upgrade regularly latest device firmware to use new functions and eliminate possible bugs.



Firmware upgrade can be done by VBUUploader , this is free you could download from the www.villbau.com website. The software always contains the latest firmwares.

The firmware upgrade steps are the following:

1. Please save the actual settings from the communicator with *EniTerm* software before firmware upgrade (check *System programming with PC software* chapter).
2. Start *VB Uploader* program for firmware upgrade.

3. Choose your unit type (STEP 1. - VBIP-G), then press NEXT.
4. Choose the new firmware file for the upgrade (STEP 2.), then press NEXT.
5. Choose the COM port, where the VBIP-G is connected (STEP 3.), then NEXT.

6. The upgrade process can be started by pressing *START* button. The program verifies the current firmware version, then waits for the user to confirm the upgrade:



7. Selecting „Yes” will start the upgrade. The whole process takes about 1 minute. If you select „No”, then no change in the firmware will be done.
8. As the upgrade is completed, load back the program data with the *EniTerm* software. (see section 6. *Programming the communicator with PC*).



To be able to use the latest features and options, it might be necessary to obtain the latest version of the *EniTerm* software. The *EniTerm* software can be downloaded from www.villbau.com for free.

10. SMS PROGRAMMING

In case it is needed (and the SIM card used in the unit is capable to send and receive SMS messages), the most important features and parameters can be configured using SMS messages.



An SMS message can contain multiple commands, separated by spaces. The proper execution of the commands is verified by answering an „OK“ messages. If there is any problem with the commands, an „ERROR“ reply message is generated. After some specific control commands, the device will perform a reboot.



The <password> used at SMS programming can be programmed with the EniTerm software, the default value is 1234. The <ch> parameter is the number of the actual channel, where it is applicable.

The following SMS commands can be used:

#<password>* reset – pl.: #1234* reset

The communicator will be reset within 30 seconds.

#<password>* ? – pl.: #1234* ?

The communicator reports the status of its inputs and its firmware version.

#<password>* apn=<apn> – pl.: #1234* apn=online

#<password>* apn=<apn>,<apn-user>,<apn-psw> – pl.: #1234* apn=my.apn,id,pw

Sets the APN for the SIM card, if necessary, username and password can also be given.

The device will restart within 30 seconds.

#<password>* a=<account-id> – pl.: #1234* a=1234

#<password>* a<ch>=<account-id> – pl.: #1234* a3=5678

Sets the account-id of the communicator globally, or by individual channels. The device will restart within 30 seconds.

#<password>* s<ch>=<ip>:<port>:<tcp/udp> – pl.: #1234* s4=my.ams.com:987:tcp

#<password>* s<ch>=<phone-nr> – pl.: #1234* s5=36301234567

This command sets the server parameters for channels 3 and 4, and the CMS phone number for channels 5 and 6. The protocol setting (tcp or udp) is optional, and the phone number has to be given in international format, without the preceding + or 00 prefix. Setting s=0 will disable reporting on all channels, s4=0 will disable reporting on channel 4. The device will restart within 30 seconds.

#<password>* t<ch>=<test-period> – pl.: #1234* t4=10

Sets the test period in minutes, for the given channel. The period value can be between 0 and 65535, setting 0 will disable test reports. The device will restart within 30 seconds.

#<password>* tc=<test-code> – pl.: #1234* tc=1603

#<password>* tc<ch>=<test-code> – pl.: #1234* tc5=1602

Sets the test code globally, or by individual channels. Please, take care to program a valid Contact-ID code. The device will restart within 30 seconds.

#<password>* o<n>=<on/off> – pl.: #1234* o1=on

Can be used to control the on-board outputs of the communicator. Value of <n> can be 1 or 2. The corresponding I/O of the device should be programmed as an output, and the operation of the output follows the preprogrammed scheme. The output can be activated with the „on“, or „1“ values, and deactivated with „off“ or „0“.

#<password>* ox<n>=<on/off> – pl.: #1234* o1=on

Can be used to control the outputs of the IO-84 module(s), connected to the communicator. Value of <n> can be 1 to 8. The operation of the corresponding output of the IO-84 will follow its preprogrammed scheme. The output can be activated with the „on“, or „1“ values, and deactivated with „off“ or „0“. When no IO-84 module(s) are connected to the communicator, the command will be acknowledged, but ignored.

#<password>* p<n>=<phone-nr> – pl.: #1234* p5=36301234567

The command can be used to set the telephone numbers, which can activate the gate-control function. Value of <n> can be between 1 and 8. To use the gate-control function, some of the outputs of the communicator (or a connected IO-84 module) must be enabled and set to „gate-control“ mode. In this mode, any calls received from the given telephone numbers will activate the corresponding output.

11. TECHNICAL DATA

| | VBIP-G |
|-----------------------|---|
| Power Supply | 10,5 – 28,0 Vdc |
| Standby Current | 80 mA |
| Maximal Current | 600 mA |
| Inputs / Outputs | 2, programmable |
| Output type / rating | OC / max. 50 mA |
| Ethernet connection | 10 Base-T |
| Mobile modem | <p>VBIP-G: M95 Quad Band 850/900/1800/1900MHz GPRS Class B, Multislot Class 12, GSM Class 4/Class 1</p> <p>VBIP-3G: UG96 UMTS/HSPA 800/850/900/1900/2100MHz@UMTS 850/900/1800/1900MHz@GSM HSUPA Rel.7 (cat.6), HSDPA Rel.7 (Cat.8) GPRS/EDGE Multi-slot Class 33 UMTS Rel. 99/7, GSM Rel. 99/4</p> <p>VBIP-4G: EG91 LTE 4G GSM 900, DCS 1800, WCDMA B1/B8, LTE B1/B3/B7/B8/B20/B28</p> |
| Antenna | SMA |
| Event buffer | Up to 64 events |
| Operating temperature | -10 °C / 50 °C |
| Size (W / L / H) | 60 x 105 x 12 mm |
| Weight | 70 g |



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