Elektronika Furman

Installation manual

FVK 842 vox Plus

**GSM communicator/dialer – for ARC Kronos LT/NET,
8 digital, 2 analog inputs, 4 controlled outputs,
Speech recorder, event log, detection GSM jammer**

Table of contents

CAUTION:

- The device complies with EN 55022, Class A. Device is intended to be connected to a control panel that complies with STN EM 60950.
- Handling the device in other ways than described in this user guide may result in damage. Device or attempt to modify it yourself. Instrument repair Entrust qualified professionals..
- To reduce the risk of fire and damage do not expose the device to moisture, rain or direct heat sources!

1. Basic information

1.1 Device description

FVK 842 vox Plus is GSM communicator/ dialer with integrated GSM module designed for transfer predefined informations by GSM network. This device operates to allow inform the user of various states for alarm systems disruption or any other device to which it is connected.

FVK 842 vox Plus can be connected to any control panel or the appropriate technological equipment.

By **FVK 842 vox Plus** you can also control connected electrical appliances such as a monitor temperature sensor.

1.2 Fields of application

FVK 842 vox Plus is a very versatile device, it can be used for example to:
· Property protection - connected with alarm system / intrusion detection / can send alarm messages, inform about the system (audio or SMS message)
· Remote control - by dialing, code from any touch tone telephone or via SMS control electrical appliances.
· Technological devices monitoring - the device can inform about the power failure, heating and so on.
· Emergency calls - in case of emergency can call relatives or friends of sick or elderly people,
· Temporary protection of buildings, huts and so on.

1.3 Technical parameters

Operating voltage: 9 to 16 V DC
Stand-by power consumption: typ.50mA
Max. power consumption: 400 mA
Outputs: switch to 0V, max. load 48V/2A DC
Tel. numbers for event reporting: 32 for voice calls, 32 for SMS sending, independently for each input
Tel. numbers for control outputs: 32 for control by dialling, 32 for control via SMS, without limit for control via DTMF
Tel. numbers for remote hearing: 32
Output timers: 1 to 255 seconds or bistable
Delay response inputs: 0 to 255 seconds
Event log: 256 events with date and time
Speech recorder: 120 seconds
Digital inputs: voltage range 4 to 24 V AC/DC
Analog inputs: voltage range 0 to 25,5 V, input resistance 10kohm
Working hours on backup battery: typ. 4 hours in stand-by
Operation temperature: -10 to +40 $_o$C
Frequency bands: GSM850, GSM900, DCS1800, PCS1900.
Dimensions: 220x154x59mm (metal case)
   :145x70x34mm (PCB)

1.4 Package contens

Included is a GSM dialer FVK 842 VOX Plus, short angled antenna.

The package is not a SIM card or battery backup.

Additional optional accessories - External antenna with cable and battery backup available from your dealer.

2. Connection

For installation, choose a dry place with sufficient signal strength of GSM network. The level of GSM signal of the operator to the installation site in advance to verify such using a mobile phone. **FVK 842 VOX Plus** never turn on without a proper antenna. For places with weak GSM signal and, if you use the speakerphone feature use the external antenna with cable - external antenna is significantly reduced interference audio signal from the microphone.
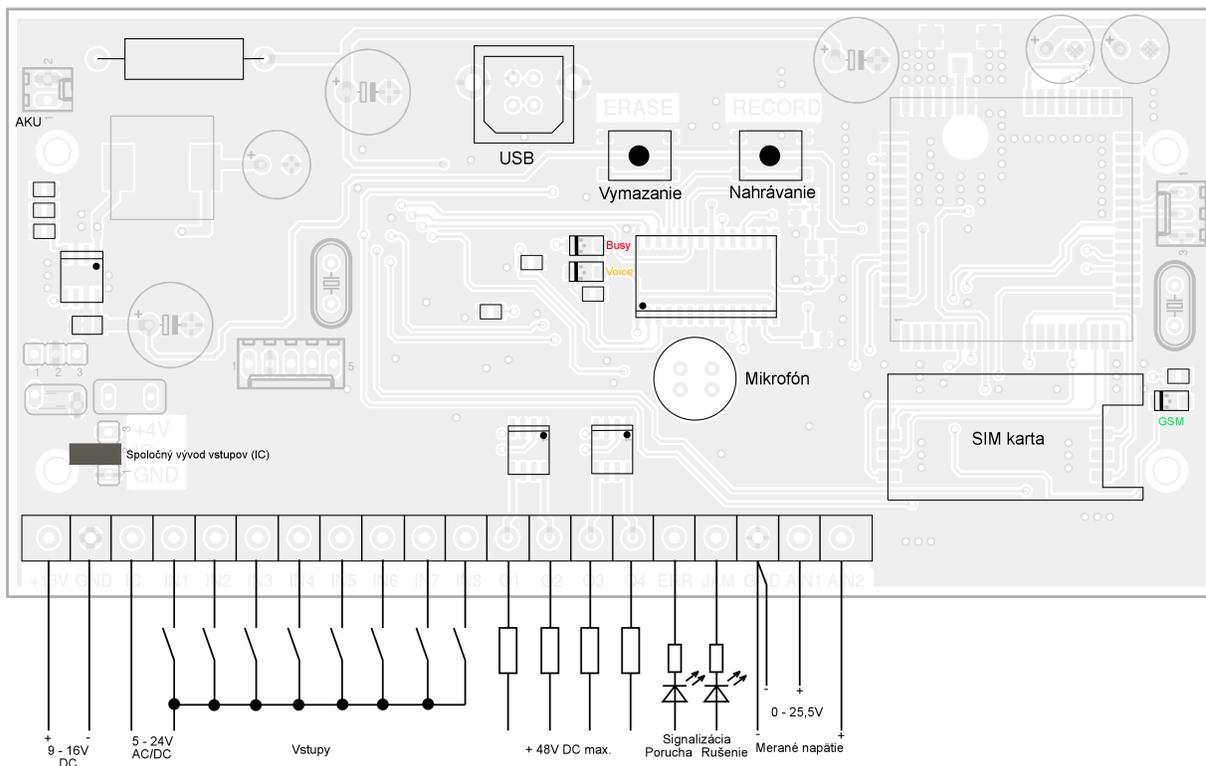
2.1 Terminal block

+13V GND power supply 9 to 16 V DC
IC - common terminal of inputs
IN1 to IN8 - inputs, isolated by optocouplers. Respond to connection or disconnection voltage between the input and the common terminal of inputs IC
O1 to O4 – controlled outputs, MOSFET with open collector, switching to GND
ERR - Error output (open collector, switching to GND during start dialer, at low GSM network signal, or failure GSM module).
JAM – jamming detection output (open collector, switching to GND)
AIN1, AIN2 - analog voltage inputs

USB connector for programming cable USB A-B.

Jumper – connect common terminal of inputs (IC) to internal voltage + 4V, or to the ground (GND).
When jumper is based, IC terminal must remain unplugged !!!

AKU – connector for backup NiMH battery.

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2.2 Push buttons

RECORD   Button for recording voice messages. After pressing it turns yellow LED "Voice" and begins to record a voice message.

ERASE   Button to delete voice messages. Pressing for longer than 10 seconds erases the voice recorder. The yellow LED "Voice" flashes 9 times.

2.3 Indicator LEDs

Red LED Busy:

      On - device starts, ongoing phone call, sending or processing of the SMS

      Flashing - device communicates with the PC

      Off – stand-by

Green LED GSM:

      Flashing 1 times per second – searching the GSM network

      Flashing 1 times per 3 second – logged to GSM network

Yellow LED Voice:

      On – recording voice message

      Flashing – playing, or deleting voice message

      Off – stand-by

CAUTION !!!

      Never manipulate with the SIM card under power !

      All wires connect to the device before connecting the back-up battery or power supply!!

      On the SIM card is necessary to disable the PIN code!

      For using controlling by dialing must be activated service CLIP on the SIM card.

      At SIM card must also be set SMS centre of mobile operator, please check it.

3. Preparing for use

3.1 Preparing PC

First install the necessary USB driver. If you have already programmed dialers FVK 842 Lite Plus, FVK 22 mini USB, FVK 22 vox USB, or FZS 511 Plus driver is already installed - is the same. You may skip to section 3.2 First power-on. After completion of the driver installation, restart the PC, configuration software do not start yet. Connect dialer by USB cable to PC, connect power supply to dialer and wait until the driver installation is complete.

To use remote access to the dialer via GPRS, you must have a PC with a public IP address and port 48006 for incoming TCP connection. On the SIM card used in the dialer also must be activated data services.

Configuration software for FVK 842 VOX Plus is not installed, you can simply save it anywhere on the HDD.

Note: Driver installation will not completed until dialer is not connected to PC. Without completed driver installation, configuration software displays the error message file FTD2xx.dll is missing.

3.2 First power-on

Connect all necessary wires, insert SIM card, switch-on power supply and connect back-up battery (if you use it). Red LED „Busy" start lights, green LED „GSM" start blinking 1 times per second – dialer searching the GSM network. After 10-15 seconds green LED „GSM" start blinking 1 times per 3 second – dialer is logged to GSM network. After next cca 20 seconds red LED „Busy" goes off – dialer is ready for use or programming.

Record voice messages: press „ERASE" button and hold it until yellow LED „Voice" flashes 9 times. Release button „ERASE", press „RECORD" button and clearly tell message for 1st, input. Release „RECORD" button, press it again and tell message for 2nd. input. Thus record messages for all digital inputs, further record messages for high and low voltage level on 1st. analog input and for high and low voltage level on 2nd. analog input (a total of 12 messages). If yellow LED „Voice" goes off while recording messages, voice recorder is full. Release „RECORD" button, erase all messages by pressing „ERASE" button until LED „Voice" flashes 9 times,release it and repeat record with shorted messages.

3.3 Programming parameters

FVK 842 VOX Plus you can program locally via USB cable or remotely through GPRS. The first programming must be done locally via USB, because you need to define tel. numbers authorized to initialize remote access via GPRS.

3.3.1 Local programming via USB

Plug the USB cable into an available USB port on the PC and the USB connector on the dialer board. The red LED "Busy" will flash in 0.5-second intervals. Wait for the message "The new hardware is ready to use" and run the configuration program. In the top left of the program window, select "USB". The program will detect the connection to the PC dialer and connection icon turns from red to green. Once communication is established are asked to enter a password. The default password is "1234". After entering the correct password, the red "Disconnected" turn to green "Connected" - dialer communicates with the PC. Fill in all the necessary data (tel. numbers, text SMS, times etc.)., or open a prepared file (main menu "File" - "Open"). After filling in all the necessary data click on "Data" - "Send" in the main menu and wait for transfer the data to the dialer. After transmission end, you can unplug the USB cable. Do not turn off the power at this moment, there would be reset the internal clock in dialer! Green "Connected" will again change to red "Disconnected."
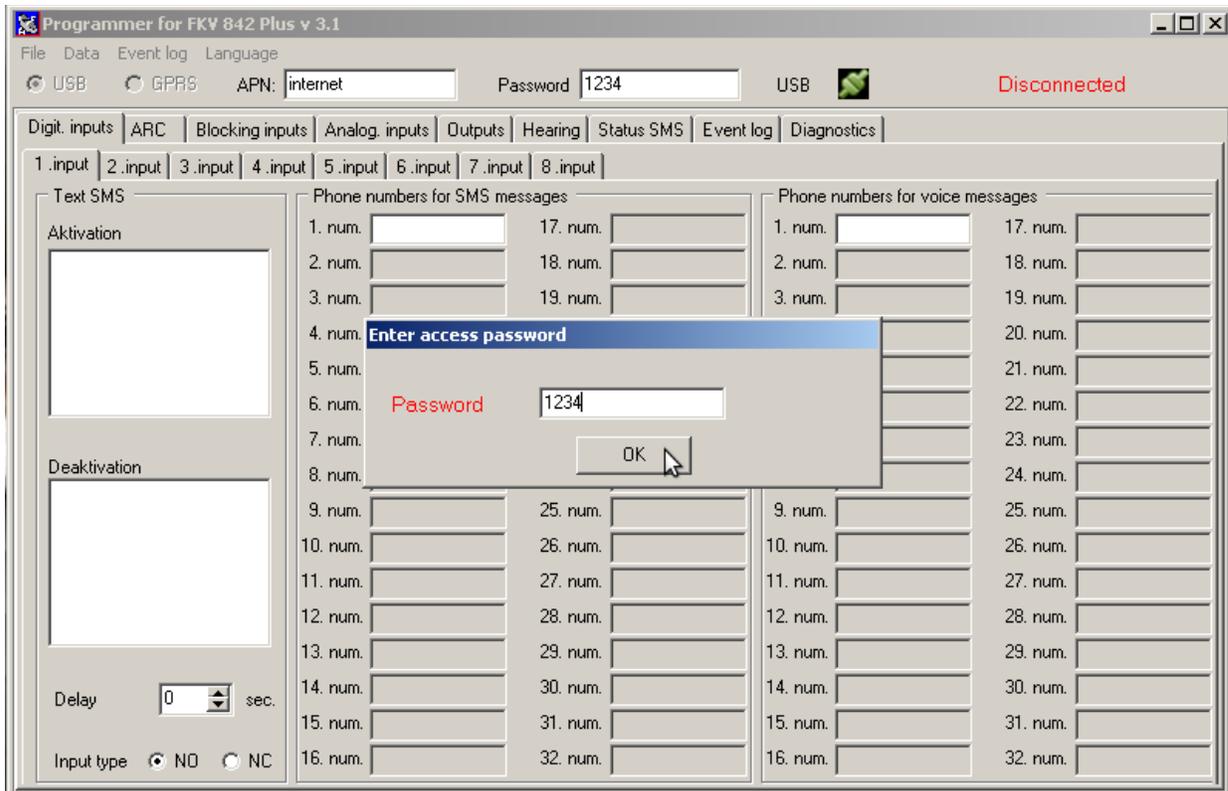
Dialer will be restarted with new setting. When the red LED "Busy" goes off, the dialer is ready for use.

The configuration software and working with him is further described in section 3.4.

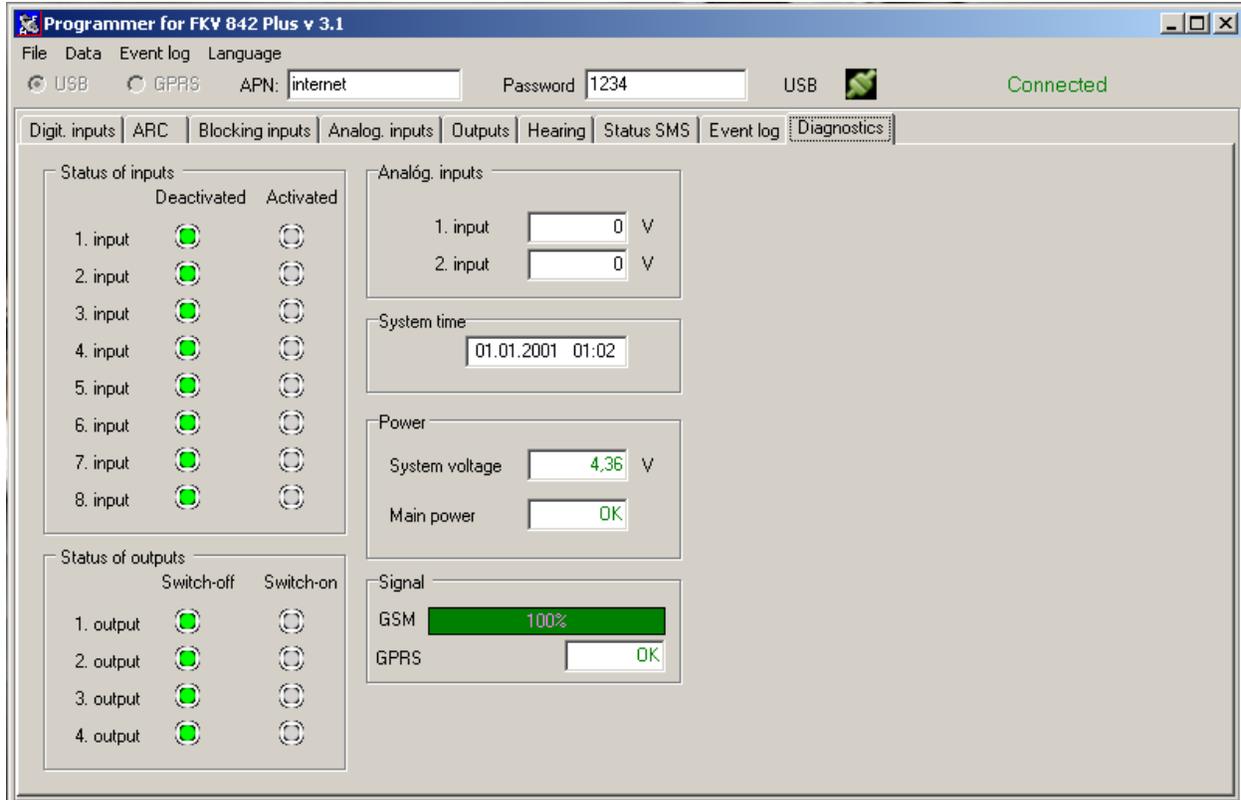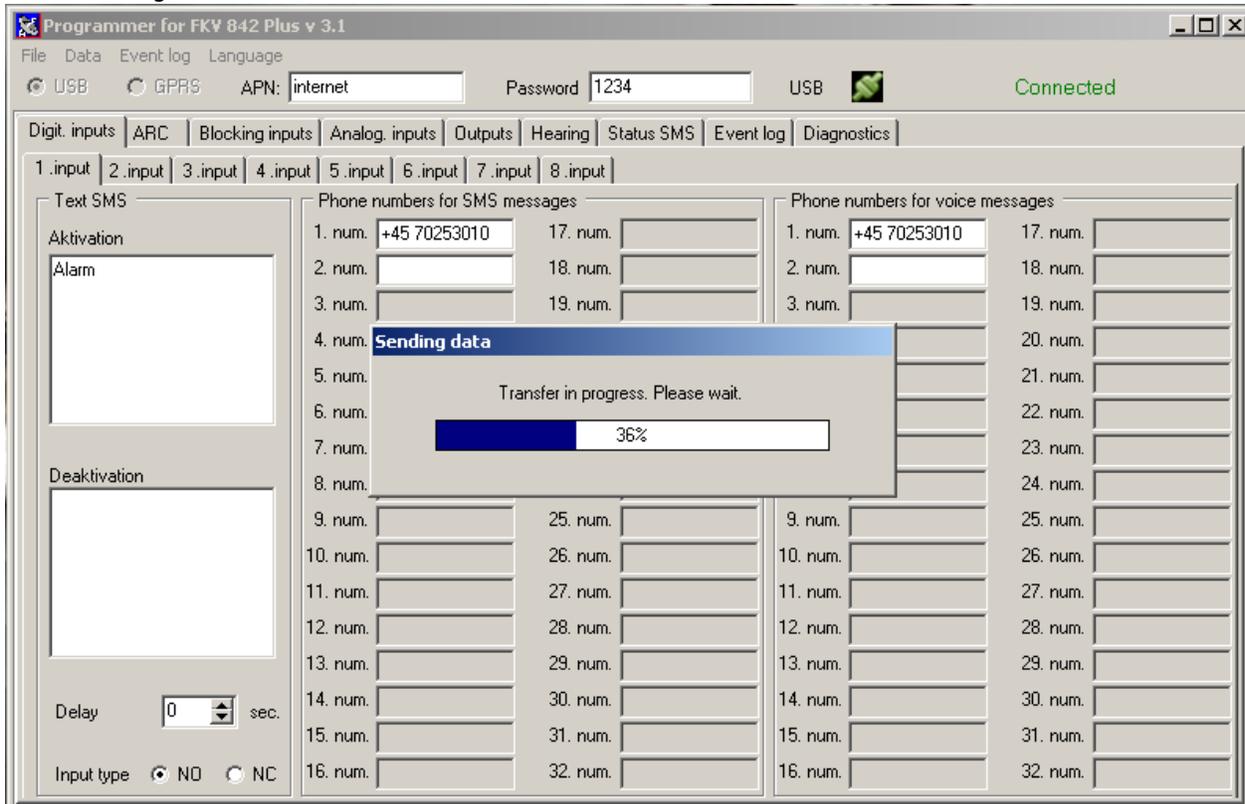Configuration software:
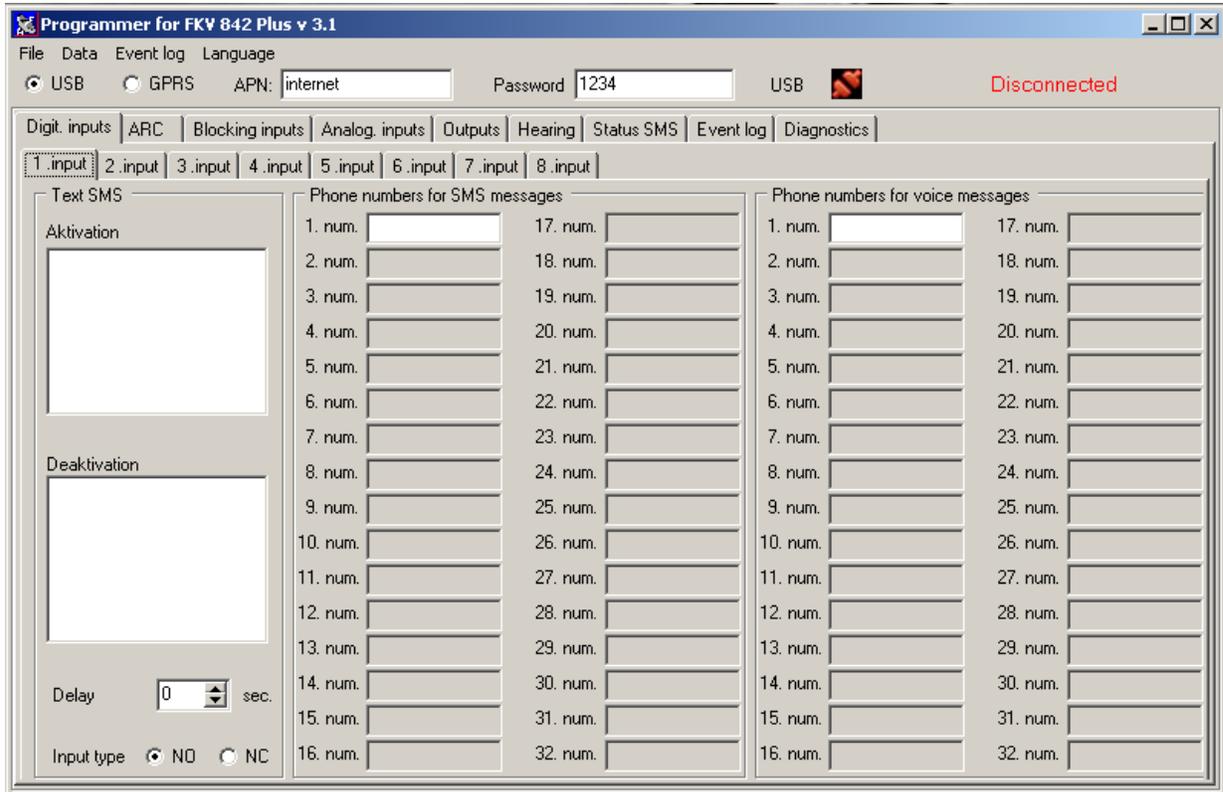
Enter password:

After entering the correct password, the red "Disconnected" turn to green "Connected".

Diagnostics page:

Transfer configuration to dialer:

3.3.2 Remote programming via GPRS

Run the configuration software and in the top left of the program window, select "GPRS". The program will expect the connection. From any phone number (listed on the card "Status SMS") send SMS with your IP address in form "IPyourip" (eg. IP78.124.69.112) to the dialer. Dialer will try establish a connection with a PC max. 60 seconds. If it fails at that time to establish a connection, it will resume to normal operation . After you have successfully established TCP connection between the dialer and PC connection, the icon turns green, and the configuration software ask you to enter a password. Next procedure is the same as for local programming via USB.

After programming, end the connection with the dialer by clicking on the connection icon (see. Figure below). The icon turns back to red and the label "Connected" to "Disconnected."
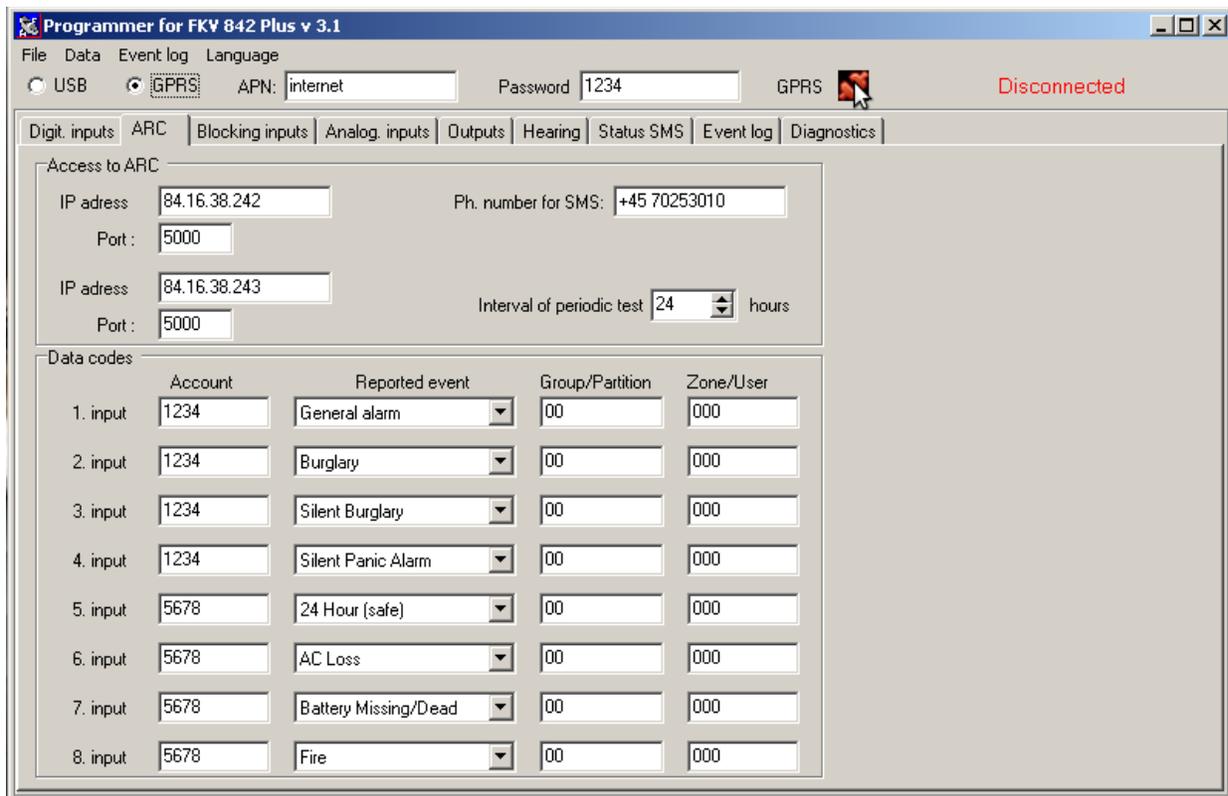
3.4 Configuration software

The main program menu contains four items:

Filer - New: Create a new blank form. All fields are cleared

Open: open saved configuration from HDD

Save: save configuration to HDD.

Close: close program

Data - Read: read configuration data from dialer

Send: send configuration data to dialer

Event log – Read: read events from event memory in dialer

Save: save events displayed in window to HDD

Print: print events displayed in window

Language - English: program switches to the English version

German: program switches to the German version

Slovak: program switches to the Slovak version

Below are positioned buttons manner of programming - USB or GPRS and two window APN and Password.

APN – enter Access Name Point by your mobile operator.

Password – enter new password, any combination of letters and numbers at max. 14 characters length.

Icon indicates a USB / GPRS connection, the label "Disconnected" / "Connected" indicates the start and end of a program to communicate with the dialer.

Below is several tabs – Digit. inputs, ARC, Blocking inputs, Analog inputs, Outputs, Hearing, Status SMS, Event log and Diagnostics

Digit. inputs:

It contains 8 tabs for every of inputs.

Text SMS –   **Activation:** text of SMS, which is send when input is activated
Deactivation: text of SMS, which is send when input is deactivated

Delay: minimum activation time. Shorter activation of input will not be reported

Input type –   **NO:** input is activated by connection voltage between common terminal (IC) and input
NC: input is activated by disconnection voltage between common terminal (IC) and input

Phone numbers for SMS messages: to these numbers dialer send SMS messages defined above

Phone numbers for voice messages: dialer will dial these numbers. During playback user can stop
dialing next numbers by pressing „*"

ARC:

FVK 842 vox Plus is compatible with ARC Kronos/ Jablonet, messages are in Contact iD format.

Access to ARC – IP address: 1st and 2nd IP address of ARC

  - Port: TCP port for connection to ARC

  - Ph. Number for SMS: to this number dialer will send SMS message if can not connected to ARC by GPRS

  - Interval of periodic test: – interval at which the dialer will reported test signal to ARC

Data codes – Account: 4-digit object code

  - Reported event: selected event will be reported to ARC

Blocking inputs:

FVK 842 vox Plus allows you to block inputs. It means that any changes on inputs do not be reported.

Text SMS – Blocking: Text SMS for blocking inputs

  Unblocking: Text SMS for unblocking inputs

DTMF code – Blocking: DTMF code for blocking inputs

  Unblocking: DTMF code for unblocking inputs

Phone numbers for blocking by ringing: – only these numbers are authorized for blocking inputs by ringing. If your phone number is authorized also for hearing, cancel call after 2 rings

Phone numbers for blocking by SMS: only these numbers are authorized for blocking inputs by SMS defined above

Analog. inputs:

 It contains 2 tabs for 1st and 2nd analog input.

Text SMS – Uin > Umax: Text SMS that is sent when input voltage is higher than limit Umax

  Uin < Umin: Text SMS that is sent when input voltage is lower than limit Umin

Delay – The minimum time during which the input voltage must be out of limit

Umax – Exceeding this value will be reported

Umin – Drops below this value will be reported

Phone numbers for SMS messages: to these numbers dialer send SMS messages defined above

Phone numbers for voice messages: dialer will dial these numbers. During playback user can stop dialling next numbers by pressing „*"

Outputs:

 It contains 4 tabs for every of outputs.

Text SMS – Switch on: Text SMS that will switch on the output

  Switch off: Text SMS that will switch off the output

DTMF code – Switch on: DTMF code that will switch on the output

  Switch off: DTMF code that will switch off the output

Switch-on time: after this time output goes to off state. If select 0, the output will be in bistable mode

Phone numbers for controlling by SMS: only these numbers are authorized for controlling outputs by SMS defined above

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Phone numbers for controlling by ringing: only these numbers are authorized for controlling outputs by ringing. If your phone number is authorized also for hearing, cancel call after 2 rings

Switch-on on blocking: (1st output only) **–** alternate output function. Output switch on if the inputs are blocked

Switch-on on dialling: (2nd output only) **–** alternate output function. Output switch on if dialer reports event from any input

Hearing:

Ph. numbers for remote tapping/hearing: only these numbers are authorized for remote hearing. If your phone number is authorized also for controlling outputs and/or for blocking inputs, dialer answers the call after fourth ring

Status SMS:

Automat. sending SMS – Interval: Interval of automat. sending messages about status (0=SMS will do not be sent automatically)

- Time: Hou**r** of automat. message sending about status

Ph. numbers for sending status SMS: to these numbers dialer send SMS messages about status or errors (failure power supply, low voltage). Sending SMS with text "?" allows you to ask immediately for status sms. Only these numbers are authorized for remote programming by GPRS

Event log: It shows the last 256 events (is necessary load them separately from main menu – „Event log" - „Read"). Newest events are displayed on top, every event has its own date and time. You can also see the result of voice call, „successful" means that the call was accepted, "failed" means that call was cancelled, it was busy, or it was out of reach.

Diagnostics:

Status of inputs: shows the current status of inputs

Status of inputs: shows the current status of inputs. Outputs can be controlling by clicking on the icon.

Analog. inputs: shows the current voltage in analog input

System time: shows the date and time of the internal clock. Internal clock is set automatically to PC time during programming parameters ("Data" - "Send")

Power – System voltage: shows the voltage of internal power supply. It must be in the range of 3.6 - 4.5V.

- Main power: shows „OK" if voltage on terminals +13V and GND is in range of 9 – 16V. If is below 8V, shows „Fail"

Signal - GSM: shows GSM signal level in %

- GPRS: ready for GPRS

4. Using the FVK 842 vox Plus

4.1 Digital inputs

These inputs are activated by connecting or disconnecting the voltage between IC and inputs depending on the choice of the 'Input type'. When inputs are activated, it will start to countdown the time set as 'Delay'. During this time FVK 842 VOX Plus constantly monitors the status of the input and if the input returns to the idle state, the timer is reset and the call/ sms sending will be not realized. If the input is activated during the entire time set as 'delay' FVK 842 VOX Plus will send that event to the monitoring station (if programmed all the necessary information - IP address, port, object code, event) and then gradually begins to dial phone numbers in the order they are programmed. After dialling each phone numbers it is waiting max. 20 seconds to answer a call by participant. If the participant does not answer the call until this time, if the call is busy, unavailable or the call is rejected, the dialer will go to the next programmed telephone number. After finishing the call to the last phone number it will start to send SMS to a phone numbers in the order they are programmed. After receiving the call while playing the voice message you can stop calling to another phone numbers as well as sending SMS by pressing '*' on the touch tone telephone. For activation of any input may be locked for setting period 2. Output- choice „locked when a call' in the card 'Outputs' - '2. Output '.

4.2 Report events to ARC

Transfer events (reporting) ARC is realized by GPRS data connection, so the SIM- card must be enable to transfer data. On the tab 'ARC' must be filled in IP address and port to connect to the ARC. Events at the analog inputs are not sent to the ARC. After activating FVK 842 vox Plus is connected with the ARC and sends a test connection. When any digital input are activated, it sends this event to the ARC. Return this input to the idle state is also sending to the ARC. Test of the connection with ARC is automatically sent at a predefined interval, enter the programming mode and exit from it is also automatically sent to the ARC. If it lose connection to the ARC, this will be written in the diary. FVK 842 vox Plus will try constantly to reconnect. If it is any input activated during connection lost, dialer will save this event to memory and it will send this event immediately after renewal of connection. This way it can memorize up to 16 events. In this memory are saved only events on digital inputs, not the periodic tests or entrances to and exits from the programming mode.

4.3 Blocking inputs

Using FVK 842 vox Plus allows you to block the input, it means that a change in the status of the inputs does not involve any reaction. This way may be dialer used for example as a simple switchboard.

You can block inputs by ringing from authorized numbers, sending SMS from authorized numbers or using DTMF code from any touch tone telephone.

At blocked input may be for a setting period locked 1. output- option 'locked when a call' in the card 'Outputs' - '1. Output '.

Blocking by SMS-   sending a SMS with the text for the blocking/ unblocking of inputs from telephone numbers eligible for blocking by SMS. FVK 842 vox locks/unlocks the inputs according to the text of the SMS, it will confirm receiving this sms. It will send back SMS as its acceptance. This event will be saved into diary together with the date, time and telephone number of the SMS sender.

Blocking by ringing-   dialling the number of the SIM-card inserted in the dialer. The number from which you are calling must be programmed for block by ringing. You must hang up the call after the second ring, otherwise the dialler will take the call after fourth ring and it will expect to enter the DTMF code. Every phone call changes the status

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blocked/ unblocked to the opposite state. Every phone call from an eligible phone numbers will be saved into a diary together with the date, time and telephone number of the caller.

ATTENTION: If you allow some telephone number blocking by ringing and control outputs by ringing, ringing in each time changes the blocking status of all outputs, of which the number has permission to control!

Blocking using DTMF- dialling the number of the SIM card inserted in dialer the call from any touch-tone telephone. If the number you are calling from is at the same time authorized to control by ringing, dialer answers the call after fourth ring, otherwise answers the call immediately. When call is received, it will beep shortly one time, then it is waiting for 10 seconds to enter the code on the keypad of your phone. Its adoption will be confirmed by another beep, it will block / unblock the inputs according to the code and then it will be waiting for 10 seconds to any other DTMF code. The acceptance of a valid code is saved into the diary, together with the date, time and number of the caller.

4.4 Analog. inputs

These inputs are activated when voltage applied to the input exceeds a set value Umax or if the value falls below a value Umin. When voltage is outside of the set range Umin – Umax, it will start the countdown time set as 'delay'. During this time FVK 842 VOX Plus continuously controls the input voltage and if its value returns to range between Umin – Umax, time count will be reset and the call / sending SMS will be not realized. If the voltage at the input is out of range Umin - Umax during the whole time set as 'delay' , FVK 842 VOX Plus will gradually dial telephone numbers , as they are programmed. After dialling every phone numbers it is waiting for max. 20 seconds to answer a call by the participants. If within that time the participant does not answer the call, the call is busy, out of reach, or the call is refused, the dialer continues to the next programmed telephone number. After completion of the call to the last phone number it will start to send a SMS to a phone numbers in the order they was programmed.

When receive a call while playing the voice message is possible to stop the calls to other phone numbers as well as sending SMS by pressing the '*' on a touch tone phone.

When you activate any input can be for a setting period locked Scene 2. output - option 'activated when a call' in the card 'Outputs' - '2. Output '. .Events on these inputs are not reported to the ARC.

4.5 Outputs controlling

Controlling by SMS – send a SMS with the text for switching on/off output from the phone numbers authorized to control by sending SMS. FVK 842 Vox puts the output into the state, according to the text of the SMS. It will confirm receiving this sms and it will send back sms as its acceptance.

Controllin by ringing- dial the number of the SIM- card inserted in the dialer. The number you are calling from must be programmed to control the output of ringing. You must hang up the call after the second ring, otherwise the dialler will take the call after fourth ring and it will   expect to enter the DTMF code. If there is setting up time of locking (length of locking 1-255 seconds), each phone call will again start the countdown of setting time. If it is set up the permanent locking (locking length of 0 seconds), each ringing changes the output state to the opposite state. Every phone call from an eligible phone numbers will be saved into a diary together with the date, time and the caller's number .

ATTENTION: If you allow some telephone number control multiple outputs

by ringing, ringing in each time will change the status of all outputs, which can be from this number controlled!

Controlling using DTMF- dialling the number of the SIM card inserted in the dialer from any touch-tone telephone. If the number, you are calling from at the same time allow to control by ringing, dialer will answer the call after fourth ring, otherwise will answer the call immediately. After a call is received, it will beep shortly one time , then it is waiting for 10 seconds to enter the code on the keypad of your phone. Its adoption will be confirmed by another beep, it will switch the output according to a pressed code and then it will be waiting for 10 seconds to any other DTMF code. If you don't want enter any another code, you may cancel the call before the expiration period. The acceptance of a valid code is saved into the diary, together with the date, time and number of the caller.

4.6 Remote hearing/tapping

Tapping of the protected area is possible only from the telephone numbers programmed as 'telephone numbers for remote hearing. ' After dialling the number of the SIM card inserted in the dialer from setting numbers FVK 842 VOX Plus answers the call after fourth ring and activates the built-in microphone. During this tapping is possible to control by DTMF code.

4.7 Status SMS

Serve as another control mechanism. FVK 842 vox may at regular intervals send SMS to your mobile phone and confirm that it is functional, it has connection, and inform about its state.

It is possible to set the interval after how many days and at what time should be the control message sent. The report includes the status of all inputs, outputs, the GSM signal level (0-9), the status of the main power supply and the time and date of the internal clock.

4.8 Failure reporting

To the phone numbers listed in the ' Telephone numbers for sending status SMS ' are automatically sent SMS about the failure and restore the main power (if the dialer is equipped with a backup battery), about a low supply voltage if there is a decrease in the internal supply voltage of dialer, for example as a result of excessive discharge of the battery and about GSM jammers' s record (this SMS is sent only after the removal of the jammers). All of these failures are also recorded in the diary, together with the date and time.

5. Default reset

Remove the main and backup power supply, disconnect the wires from the terminals 'IN1', 'O1' and link them to each other. Terminal 'IC' connect with '13V'. Turn on the main or backup power supply and wait until the red LED 'Busy' will flash 3 times. Disconnect the power supply again, remove connection between 'IN1' and 'O1' or even connection 'IC' and '13V' if not needed for your input wiring. Reconnect the wires that you before disconnected from these terminals , and power supply.

This procedure will erase all the programmed data and daily events. The access code will again be '1234'.

This procedure is designed especially for the case of a lost or forgotten password. If you only need to reprogram some data, just download the configuration to the PC, change the required data and send it back to the dialer. The original data (in addition to the event log) will be automatically overwritten.

6. Troubleshooting

description	Possible cause	Removal
After power on the LED 'Busy' is always on. LED 'GSM' flashes 1x per second	SIM card inserted incorrectly, dirty contacts on the card or card holder	Control SIM card
	PIN-code protection turned on	Turn off the PIN-code protection
	Dirty contacts on the card, or card holder	Clean the contacts or gentle stretch them
	In the place of installation is not a GSM signal	Dialer move to another location or use an external antenna with cable
Control by ringing and remote hearing does not work	On the SIM card inserted in the dialer is not activated service CLIP (caller ID)	Activate service CLIP
	The number you are calling from has active CLIR service	Deactivate CLIR service
During remote tapping is hearing a strong interference	Weak GSM signal in place of dialer' s installation	use the external antenna, or find a place with a stronger signal
Transport to the ARC does not work, dialer slowly responds to the inputs	The using SIM-card does not support data transfers	Check with your mobile operator
	Incorrect IP address or port for ARC	Check the entered data with panel's operator
	In the place of installation is weak or no signal coverage of GPRS	Use an external GSM antenna, or find a place with a stronger signal
Configuration software reports the missing file FTD2XX.DLL	USB driver has not been installed	Install the driver and restart your PC
	The PC has not yet been connected to the dialer vox, FVK 842 842 FVK 22 vox USB, FVK 22 FVK Lite mini USB or switchboard FZS 511.	Connect the dialer, wait for the completion of the installation of drivers for new hardware, and then restart the program
The configuration software reports 'the connected device is not FVK 842 Plus'	You have connected the device to the PC with a similar USB device (USB-RS 232 converter)	Disconnect all other USB devices from your PC
Not working remote access, Diagnostics reports 'GPRS-Fail'	On the SIM card in the dialer are not activated data services	Activate data services with your network operator
Not working remote access, Diagnostics reports 'GPRS-OK'	The IP address for the connection is not public, port 48006 is blocked	Check the availability of the IP addresses and firewall settings

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Declaration of conformity

Manufacturer: Elektronika Furman s.r.o.

Adress: P. Jilemnického 297/19
                           059 01 Svit
                           Slovak Republic

declares
that the product

Dialer FVK 842 vox Plus

Intended purpose Equipment remote control by means GSM/GPRS communication

Equipment class /

complies with the essential requirements of § 3 and the other relevant provisions of the FTEG (Article 3of the R&TTE Directive), when is used for its intended purpose.

Measures for the efficient use the radio frequency spectrum - Air interface of the radio systems pursuant to § 3(2) (Article 3(2))

Harmonised standards applied: ETSI EN 301 419-1, EN 301 511 v 7.0.1
Protection requirements concerning electromagnetic compatibility § 3(1)(2), (Article 3(1)(b))

Harmonised standards applied: ETSI EN 301 489-7, EN 55022, EN 50130-4
Health and safety requirements pursuant to § 3(1) 1. (Article 3(1) a))

Harmonised standards applied: EN 60950
GSM module marked CE 0700

Elektronika Furman s.r.o.

Henrik Furman

Svit, 23.10.2012

Expertise

**Expert Opinion of the Notified Body on the Conformity Assessment
according to Article 10.5 of R&TTE Directive 1999/5/EC**

PHOENIX TESTLAB

EU Identification Number 0700

Bundesnetzagentur

Recognised by

BNetzA-bS-02/51-55

Expertise No.	09-112059b
Certificate Holder	Quectel Wireless Solutions Co.,Ltd
Address	Room 801, Building E, No 1618 Yishan Road, Shanghai, China, 201103
Product Description	GSM/GPRS 850/900/1800/1900 Module Evaluation Board
Brand Name / Model Name	Quectel /M10
Frequency Range	GSM/GPRS 900/1800
Transmitted Power	Max 2W

Opinion on the Essential Requirements

Article 3.1a): Health and Safety	**No remarks**
Article 3.1b): Electromagnetic Compatibility	**No remarks**
Article 3.2: Effective Use of the Radio Spectrum	**No remarks**

CE-marking

Marking Example (Class 1)   **C€ 0700**

This certificate is issued in accordance with the Directive 1999/5/EC of the European Parliament and the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity dated 9th March 1999 and is only valid in conjunction with the following annex (2 pages).

Blomberg, 25 August 2009

Place, Date of Issue
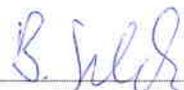
Signed by Bernd Selck

Technical Construction File (TCF):

Description

User Manual:	EVB User Guide, M10_EVB_UGD_V1.00, 27 pages, 2009-06-27
	GPRS Setup, GPRS_Setup_V1.00, 15 pages, 2009-06-27
	AT Commands Set, M10_ATC_V1.01, 165 pages, 2009-06-26
Operational Description:	Tune up procedure, 1 page, --

Manufacturing Documents

Block Diagram:	M10 Functional Diagram, 1 page, 2.M10 Block Diagram .pdf 1 page--
Circuit Diagram:	M10_V1.01_SCH.pdf, 3 pages, 2008-05-23--
Parts Placement:	M10_V1.01_PCB_TOP.pdf, 1 page, Jul 18 2009
PCB-Layout:	M10 PCB Layout, 4 pages, --
Parts List:	M10_V1.01_BOM090718, 1 page, 3.M10_Part_List.pdf , 4 pages --
Hardware Version:	V1.01
Software Version:	MTK0836

Applied Standards and Test Reports

Specification	Laboratory	Test Report Number
EN 301 489-7 V1.3.1: 2005 EN 301 489-1 V1.8.1: 2008	Morlab	SH09070021AE01
EN 60950-1: 2001 + A11: 2004	Morlab	SH09070021AS01
EN 301 511 V9.0.2: 2003 ETSI TS 151 010-1 V1.8.0	Morlab	SH09070021AR01

Further Documents

Declaration of Conformity , 1 page, 25. Aug. 2009

MPE(Calculation for SAR-Test), 1 page, --

Tune-up Procedure of M10 , 1 page

M10_User_Guide_V1.00, 18 pages

M10 Operational Descriptions, 2 pages

Opinion on the Essential Requirements:

The basis of this Expertise is the Technical Construction File (TCF). If the TCF includes test reports issued by laboratories accredited to the standard ISO/IEC 17025, the test results of these reports are considered as a basis for the conformity assessment of the Notified Body.

Article 3.1a): Health and Safety:

- Conform

Article 3.1b): Electromagnetic Compatibility:

- Conform

Article 3.2: Effective Use of the Radio Spectrum:

- Conform

General Remarks:

- If the module should be integrated into a system, this set needs to be reassessed.
- Before putting a product on the market which uses non harmonised frequencies (Class 2) the national authorities of the member states have to be notified.
- This conformity assessment is limited to the essential requirements of the R&TTE Directive. Only products fulfilling all essential requirements of all applicable new approach directives may be placed on the market and put into service.
  Products in compliance with all provisions of the applicable directives providing for the CE marking must bear this marking.

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