User's Guide

Using ChangeMe

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Using ChangeMe

ChangeMe software is a user friendly program that enables the user to configure Tipro products according to his needs.

ChangeMe supports FREE, FREE+, BeFREE, MID, FCX and K-LINE range of products.

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CHAPTER 1

Introduction

A short introduction to ChangeMe and FREE/FREE+/BeFREE.

What is it, where it came from and what you can do with it.

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Description

FREE/FREE+/BeFREE is a fully modular family of programmable keyboards, ID-modules, card readers, LCD screens, systems, pointing devices and other modules.

A composition of up to 14 FREE/FREE+/BeFREE modules and one Controller, mechanically and electrically connected, is referred to as a FREE/FREE+/BeFREE configuration.

FREE/FREE+/BeFREE configurations can be divided into four categories:

- one based on a Touchscreen computer (BeFREE),
- one built around a Touch module (FREE+),
- another one built around a keyboard module (FREE) and
- one based on the Chameleon, Speakerbox or Handset module.

The first one has the Controller built into the BeFREE module, the second one has the Controller in the Touch module, the third one has the Controller (Master module) in the keyboard, the last option has the Controller in the Chameleon, Speakerbox or Handset module.

History

FREE is the successor of TIPRO's successful MID generation.

MID started in 1997 as a revolutionary idea for modular and programmable keyboards.

A master module as base, making a combination of slave devices possible.

In 2002 this line is continued and expanded with FREE.

The master is now a Controller and slaves are called modules, the principle stays.

A FREE+ module is a low profile design LCD touch screen, which can act as a base for a configuration.

The FREE/FREE+/BeFREE family is growing, as constantly new modules and features are under development.

Features

A variety of modules can be combined with FREE/FREE+/BeFREE.

Keyboards ranging from 32 to 128 keys with straight-xy matrix or QWERTY layout can be side by side with magnetic card readers, identification modules (keylock or iButton®), barcode readers, pointing devices, handset and RF ID module.

The All in one system (BeFREE), the Touch screen (FREE+) and Chameleon can be used stand-alone or can act as a base for a configuration.

All keys are fully programmable with ChangeMe software.

Keys can contain

- a sequence of codes or a string like "SOLUTION" or
- special keys like CTRL+F11
- functions like Beep and Delay
- a combination of all

USB controller offers also security features on the device itself.

This makes FREE/FREE+ excellent suited for

- POS, where every key means an item
- special office applications, where every programmable key replaces a combination of keys, for instance menu shortcuts (e.g. CAD, editors, bookkeeping programs)
- dedicated applications where very few commands are needed or where low introduction time is essential (e.g. telephone control system, label printers, industrial machines)

Because of FREE/FREE+/BeFREE's elegant design it is not needed to hide the keyboard and because of the touch screen's low profile there is less barrier between the client and the salesperson or receptionist.

Typographical Conventions

Before you start using this guide, it is important to understand the terms and typographical conventions used in the documentation.

For more information on specialized terms used in the documentation, see the Glossary at the end of this document.

The following kinds of formatting in the text identify special information.

Formatting convention	Type of Information
Triangular Bullet(➢)	Step-by-step procedures. You can follow these instructions to complete a specific task.
Command	Items you must select,such as command buttons, or items in a list.
MENU OPTION	All Menu's are listed like this
Important	Use to emphasize the importance of a point.
`Monospace`	Names of keys on the keyboard. for example, `Shift`, `Ctrl`, or `Alt`. Also `text` to be entered
`KEY+KEY`	Key combinations for which the user must press and hold down one key and then press another, for example, `Ctrl+P`, or `Alt+F4`.

CHAPTER 2

What's new ?

What is new in this version of ChangeMe.

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5.29 to 5.28

- New analogue handset module supported (it can be connected to BeFREE touchcomputers):
  - Handset HAA
  - Handset HAA with dialpad
- BeFREE 22 touchcomputer:
  - Single volume control feature implemented
- USB HID Telephony content for Handset modules
- PS/2 interface option is disabled on 64-bit systems
- HID API updated
- ChangeMe help updated

5.28 to 5.26

- New Compact Touchcomputer with Integrated Intercom and Handset:
  - BeFREE 07
  - BeFREE 07 with dialpad
  - BeFREE 07 without gooseneck microphone
- HID API updated:
  - BeFREE 07 supported
- ChangeMe help updated

5.26 to 5.25

- Multi USB device detection
- Autodetect note about showing default settings
- BeFREE 20 touchcomputers:
  - support for new version of audio board
- BeFREE 10 touchcomputers:
  - support for new version of audio board
  - support for touchcomputers version 05.16.xx

- New modules:
  - F8Q keyboard
  - F8X keyboard
  - Onur audio board
- Handset version issue fixed
- Set ID issue fixed
- Support for Windows 10 update version 1809
- ChangeMe help updated

5.25 to 5.24

- New touchcomputer modules with integrated intercom supported:
  - BeFREE 22
  - BeFREE 22 with echo canceller
  - BeFREE 22 without gooseneck microphone
- HID API (ver. 2.0.1.14):
  - support for BeFREE 22 touchcomputer with integrated intercom
- ChangeMe help updated

5.24 to 5.23

- Support for new version of BeFREE 10 touchcomputer with integrated intercom:
  - Optional independent right speaker volume control
  - Additional low-frequency loudspeaker
  - Optional linear regime of microphone amplifier
  - Microphone signal can be disconnected from the VU meter
  - User defined reference signal for echo canceller
- Support for new version of Speakerbox Onur:
  - User defined microphone logic
- ChangeMe help updated

5.23 to 5.22

- Support for new version of Handset module:
  - Software adjustable microphone preamplifier

    - Optional linear regime of the microphone amplifier
    - Improved LED indication
- ChangeMe help updated

5.22 to 5.21

- BeFREE 10 module:
    - Gooseneck microphone (together with LED) can be controlled by software
    - Automatic dimming mode removed
- BeFREE 20 module:
    - Single volume control - bug fixed
- Handset module:
    - Support for 1.00.B7
- TXB file:
    - Support for BF15 controllers 05.0E.2F over serial port
- ChangeMe help updated

5.21 to 5.20

- New touchcomputer modules supported:
    - BeFREE 20
    - BeFREE 20 with echo canceller
    - BeFREE 20 without gooseneck microphone
- New modules supported:
    - Speakerbox Onur
    - AddOn ver. 2
- Handset module:
    - "Shift to layer" functionality supported for handset keys (PTT, hook switch and dialpad)
    - Version not shown correctly when lay file opened - bug fixed
- PS/2 content not programmed into controllers (Speakerbox, Handset, BeFREE) that do not support PS/2 interface
- Updated drivers
- ChangeMe help updated

5.20 to 5.19

- BeFREE 10 module:
  - Read settings through RS232 interface
- Handset module:
  - Dialpad keys changing LEDs - bug fixed
  - Mute functionality - bug fixed
- iButton module:
  - RS232 interface for controller ver. 05.xx.xx
- Key content with delays - bug fixed
- Updated drivers

5.19 to 5.16

- BeFREE 10 module:
  - User-defined volume characteristic
  - Manage of PTT key LED can be disabled
  - New HW supported:

  a) Volume of speakers can be set separately

  b) New microphone settings
  - added Default/Read button
- Handset module:
  - New form
  - Dialpad keys can be defined as press and release sequence separately
  - New HW supported (speaker and microphone settings)
  - Default/Read button
- Speakerbox module:
  - Inputs dialog changed - added digital input
- Updated drivers
- ChangeMe help updated

5.16 to 5.15

- Speakerbox module:
  - User-defined volume characteristic
  - New HW supported:

  a) Volume of speakers can be set separately

  b) New microphone settings
- Handset module:
  - Form reorganized
  - Content of handset button and hook switch can be defined using common key content form
  - New form for defining LEDs behaviour

5.15 to 5.14

- Speakerbox module:
  - Microphone form rearanged
  - Input microphone form rearanged
- BeFREE 10 module:
  - Microphone form rearanged
- ChangeMe help updated

5.14 to 5.13

- Support for USB HID Telephony modules:
  - HID Telephony event can be sent from any HID Telephony module in configuration
  - USB HID Telephony testing application shows events from all HID Telephony interfaces
- BeFREE 10 module:
  - Minor visual changes of forms
  - Initial behaviour of microphone key led can be defined

- Position of on-screen modules corrected
- Clear desktop bug fixed
- Handset key mute bug fixed
- Updated drivers
- ChangeMe help updated

5.13 to 5.12

- New module supported:
  - BeFREE 10 (BF10) - 10.4" Touchcomputer with Integrated Intercom
- ChangeMe help updated

5.12 to 5.11

- Speakerbox form
  - Handsfree functionality (5th key) support for new firmware
  - HID Telephony events support for Speakerboxes with HID Telephony interface

5.11 to 5.10

- Speakerbox form
  - New - rearanged
  - More intuitive to use
- Key content form
  - Key-press and key-release event can be defined separately
- Chameleon form
  - Common images can be edited
  - Bugs removed
- Handset form
  - LEDs bug removed
- ChangeMe help updated

5.10 to 5.9

- New modules supported:
  - USB Speakerbox with HID Telephony interface
- ChangeMe help updated

5.9 to 5.8

- New modules supported:
  - USB Handset HUA with microphone mute functionality
  - USB Handset HUM with microphone mute functionality (optionally built-in dialpad)
  - USB Handset (HTM, HTA) with HID Telephony interface (optionally built-in dialpad)
- BeFREE events (Touch disable, LCD luminance, LCD backlight) used with delays issue fixed
- Success sequence for Level 3 issue fixed
- Updated drivers
- ChangeMe help updated

5.8 to 5.7

- Support for 64-bit operating systems (Windows 7)
- Supported new module:
  - Handset with dialpad
- Speakerbox module:
  - 6th key defined as Push-to-talk or Push-to-mute
  - Channel/Speaker issue fixed
  - Version issue fixed
- Sending issue of success/fail/restore security sequences fixed
- Updated drivers
- ChangeMe help updated

5.7 to 5.6

- Supported new modules:
  - BeFREE v3 (Atom based)
  - BeFREE BF104
  - Handset HUA-5B
- Speakerbox & Handset new features:
  - Handset key can be defined as Push-to-talk or Push-to-mute
  - Alert tone can be muted when Handset is active
  - Channel/Speaker selection
  - OPOS content can be programmed into Speakerbox keys and events
  - Volume initial values can be defined
- BeFREE v3 events:
  - LCD Luminance Up/Down/Max/Min
  - LCD Backlight On/Off
  - Touch Enable/Disable/Toggle
- Updated drivers
- ChangeMe help updated

5.6 to 5.5

- Issue with programming on BeFREE is fixed
- Dual interface (PS/2 and USB) is programmed by default
- New modules:
  - standalone USB Handset
  - 5-position Keylock
  - RF-ID module in numeric part of front keyboard
- Automatic update using parameters:
  - -SAVEBEFOREUPDATE parameter:

a) current content is saved in lay file before update is made

- Keyboard info window:
  - shows info about controller memory size
  - firmware type info for new hardware/firmware

- Option to show Labels on keys is saved when ChangeMe is closed
- Updated drivers
- ChangeMe help updated

5.5 to 5.4

- BeFREE module:
  - LEDs can show BeFREE state or keyboard layer
  - RS232 communication supported
- Speakerbox module:
  - initial values of microphone and sidetone
  - keys and LEDs functionality
  - support for new hardware: handsfree and handset/headset microphone can be separately set
- Scanline:
  - F13, F14, F15 and F16 key can be added from scanline context menu (right-click)
- Automatic update using parameters:
  - loading mtx file into the first module in configuration
  - -NOINTERACTION parameter:

  a) no user interaction is possible during the automatic update

  b) exit error code is returned
- ChangeMe help updated
- Updated drivers
- MidApi:
  - support for Speakerbox module
  - additional functions for Chameleon module

5.4 to 5.3

- Support for Speakerbox module:
  - Audio settings of Speakerbox
  - Key sequences for key press and release can be defined separately
  - Handset and Headset events (connect, disconnect)
  - Digital potentiometer and bargraph settings (VU-meter, Speakerbox and Handset/Headset volume)

- Support for new BeFREE module
- Chameleon module:
  - OPOS content for mechanical (non LCD) keys
  - Key-click option
- Handset module:
  - Handset can send events to Speakerbox if both are in configuration:

  a) Mute/activate microphone on the Push to talk button press/release

  b) Switch between Speakerbox and Handset on the Hookswitch event
- ChangeMe help updated
- New OPOS installation (Device logical name and interface can be defined)
- Updated drivers

5.3 to 4.7

- Windows Vista ready
- Updated drivers
- USB driver is WHQL certified by Microsoft
- Support for new Chameleon module
- RS232 boot sequence support
- Additional AtMega support:
  - RS232 content
  - Add-on modules
  - Verify bug solved
  - Security for secondary PS/2 keyboard
- RS232 support for Handset
- Keyboard info updated
- KB50 and FCX keylock is shown as two-position keylock
- Labels can be shown on keys instead of type
- BeFREE, Handset and iButton bugs solved
- Positioning of industrial keyboards bug solved

4.7 to 4.5

- New installation
- Updated drivers
- Double-clicking the .lay file opens it in ChangeMe
- Drag/drop of .lay files supported
- Additional command line parameters:
  - lay files can be downloaded (add complete path to the parameters string)
  - port can be defined with USB PS2 or COMx switch where x is the port number. If no port is defined, default from ChangeMe.ini file is used
  - if "-AUTO" switch is added, ChangeMe closes after download
- Added support for PS/2 controller based on AtMega
- Code sequence - is now programmed as "memory dump" Data written in hex codes is directly copied to memory - same as in USB case, different to old Motorola based PS/2
- Boot sequence supported by all controllers
- Mcr form reorganized
- iButton and Keylock forms bugs solved
- Handset form reorganized
- USB industrial keyboards support

4.5 to 4.4

- key content window redesigned, new USB features added
- context sensitive help - press F1 on each form to get help for the module.
- new features in scanline (right click)
- new modules: TM-KMS128, TM-RFID
- new features added for OCR, bidirectional MCR
- some bugs removed (MID iButton)
- multiplatform batch download (TXB) support

4.4 to 4.3

- controller module visible
- support for advanced features for USB controller
- adding beep and delay supported in new scanline
- new modules: TM-KMR128, TM-HUA, KB50

4.3 to 4.2

- improved USB download
- USB upload
- OCR module support
- new MidApi ver. 4.0

4.2 to 4.1

- support for USB controller
  - faster, platform independent USB protocol support
  - new features: security
- keyboard content (PS/2 and USB) can be programmed with PS/2 or USB keyboard
- LabelMe supports printing labels also for MID

4.1 to 4.0.4

- (autodetect) function changed . If controller is not connected to the specified port, other ports are checked.
- New parameter in preferences: default port. This port is always checked first.
- Load predefined content is added as New entry to key popup menu.
- Three default key contents files are added- Qwerty.mtx, NumPad.mtx and Front.mtx (in the directory "Predefined")
- Improved API 3.1.8
- Improved XP compatibility

4.0.4 to 3.0.9

- support for new FREE/FREE+ modules
- removed the limitation of 256 keys
- new look of the program
- new LabelMe utility (FREE/FREE+ modules supported only). The MID users have to use the PrintLabels utility of ChangeMe
- support for Chameleon module, JIS reader
- improved support for downloading on the portable computers

---

if you have a MID or FREE/FREE+ device with RS232 output then you can download it also on the notebook computer through the COM port you need to connect both the keyboard connector (mini DIN 6) to the auxiliary keyboard port on your notebook and the RS232 connector (DSUB9) to a free COM port

---

- start the program ChangeMe with the parameter -COM. Using this parameter the program does not check whether the modular keyboard is connected on the system and searches it on COM port only.
- improved communication routines (MIDAPI ver 3.1.5)
- new features in service (debug) mode
- Winkoki : capturing keyboard scan codes
- ScanLineBig : capturing and displaying a lot of entered codes
- Copy/Move layers utility
- Set Click and Autorepeat flags for all keys

CHAPTER 3

Installation of FREE/FREE+ software

The **general** section covers the installation of ChangeMe, needed for programming the keyboard.

If you have a FREE+ module with touchscreen you will also need to install drivers. This is described in the **Touch screen** section

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General

There are three types of modules: Display, touch screen and programmable modules.

The display modules don't need any software to be installed.

The touch screen needs software for specific features like calibration.

Programmable modules need ChangeMe to be configured. They don't need any software or special drivers once they are programmed. (An exception is when MidAPI is used by an application)

Insert the Tipro CD into the CD drive. A startup screen will appear. (If there is no startup screen, go to the CD drive in explorer and double-click "install")

Click "Install ChangeMe".

Follow the on-screen directions.

Standard Installed software

- **ChangeMe**

  ChangeMe is Tipro's keyboard configuration utility, previously known as MIDWIN.

  Use ChangeMe to program your keyboards, card readers, key locks etc.

- **MIDAPI**

  MIDAPI is the library of functions that can be used by other software to directly access the keyboard.

  MIDAPI is installed together with ChangeMe.

You can also choose to install just one component.

On a computer where you don't program the keyboard, ChangeMe is not needed.

Additionally, if your software doesn't use MIDAPI, you don't need to install anything! Just plug the -programmed- Keyboard to the computer and it works.

Touch screen

If you have a FREE+ module based configuration with a touch screen (TM-T__) you also need to install the drivers for the touch screen.

Insert the Tipro CD into the CD drive, a startup screen will appear.

Choose "Install ELO touch driver", "Install drivers for this computer". Select the port which the FREE+ module is connected to. It can be Serial (COM port) or USB.

At serial port it is important to choose the right COM port.

After installation the touch screen can be calibrated by going to START > SETTINGS > CONTROL PANEL > TOUCH SCREEN.

CHAPTER 4

ChangeMe – Overview

Tipro keyboards are programmable keyboards. Before you can use them you first have to program them. **ChangeMe** is the utility to do that.

In this chapter we will have a first look at the program. What can we see on the screen and what can we do with it.

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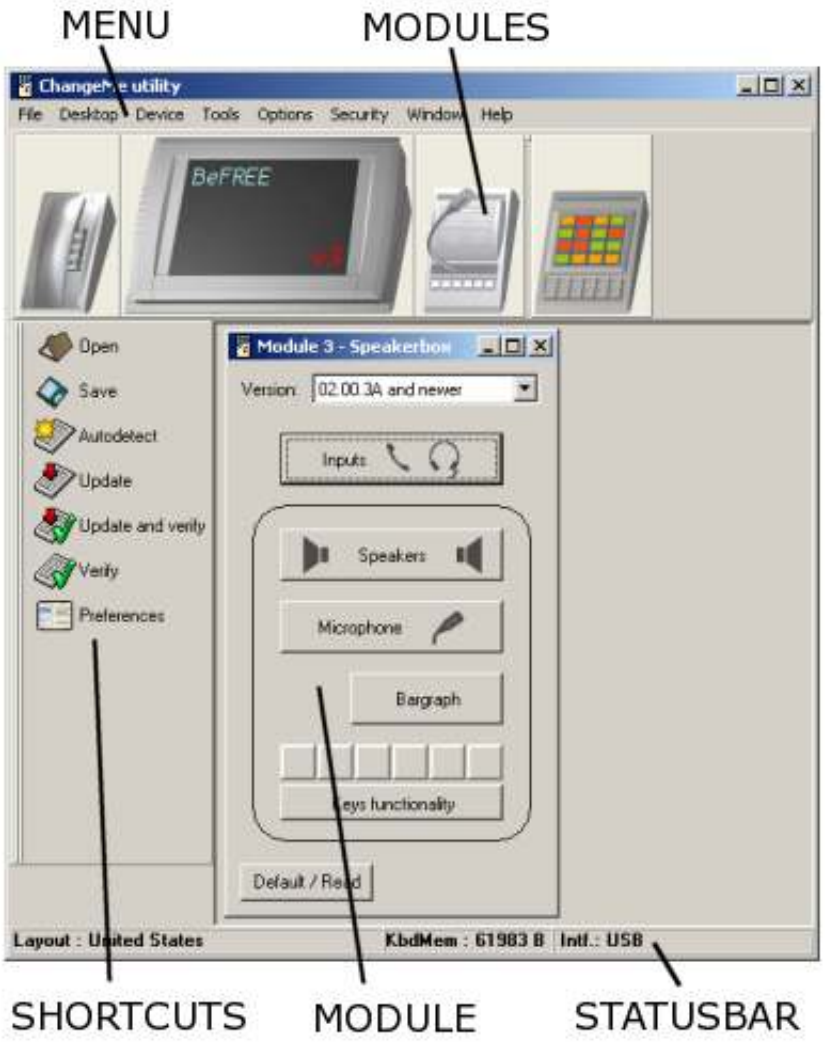
First look


MENU
MODULES
File Desktop Device Tools Options Security Window Help
BeFREE
Open
Save
Autodetect
Update
Update and verify
Verify
Preferences
Module 3 - Speakerbox
Version: 02.00.3A and newer
Inputs
Speakers
Microphone
Bargraph
Keys functionality
Default / Read
Layout : United States
KbdMem : 61983 B
Intf.: USB
SHORTCUTS
MODULE
STATUSBAR

- **Menu** — All ChangeMe commands are placed here. see ***Menu structure*** for a detailed description of all menu's
- **Modules** — All the -programmable- modules in your configuration are listed here. Click the one to open its **Module view**. Modules are ***autodetected*** or can be added by ***hand*** (offline).
- **Shortcuts** — Frequently used menu items are listed here.
- **Module view** — Depending on the type of module, different windows can open. Refer to the section ***programming*** for a detailed explanation of each moduletype.
- **Statusbar** — Shows the current status of program settings. See ***statusbar*** for a detailed description.

Status bar

- **Layout** — the current keyboard layout. Can be changed in menu OPTIONS > PREFERENCES > KEYBOARD SETTINGS
- **KBDMem** — the keyboard memory still available. See also DEVICE INFO
- **Intf** — The current interface used. Can be PS/2, a COM port or USB. Double click to access menu OPTIONS > COMMUNICATIONS PORT

CHAPTER 5

Menu Structure

File (on page 40)

New	Creates a new file
Open	Opens an existing file
Save	Saves the current configuration
Save As	Saves under new name
Save as batch download file (TXB)	Saves the current configuration as TXB file
Exit	Exits ChangeMe

Desktop

Add Module	Adds a module to the desktop
Delete Module	Deletes a module from the desktop
Open Desktop	Opens a previously saved desktop
Save Desktop	Saves current desktop
Clear Desktop	Clears the desktop
Auto Detect	Detects all modules currently connected

Device

Update keyboard content	Updates the keyboard with the current configuration
Update and Verify	Updates the keyboard and checks the memory
Verify	Checks the Controllers memory
Load content from keyboard	Loads the configuration from the keyboard to the desktop
Info	Gets device information

Tools

Scanline	Test keyboard content (PS/2 and USB)

Text Window	Test printable PS/2 or USB key contents
TTY Terminal	Test RS232 key contents
Options	
Toolbars	Show / hide toolbars
Communication port	Select communication port
Preferences	Set program preferences
Security	
Show/Hide Security toolbar	Manage Security toolbar
View	Choose which information is displayed on the keys
Edit passwords	Manage security passwords
Protected key combinations	Manage protected key combinations
Security wizard	Assist you to set up Security features
Set content	Set content to a key
Set keys to Security Level 0	Define keys for security level 0
Set keys to Security Level 1	Define keys for security level 1
Set keys to Security Level 2	Define keys for security level 2
Set keys to Security Level 3	Define keys for security level 3
Set LOGON key	Define Log on key
Set LOGOFF key	Define Log off key
Windows	
Tile	Show tiled Windows
Cascade	Show cascaded Windows
Help[1]	
Check for update	Check for program update on internet
ChangeMe Help	This help file

[1] In the help menu you can find this help file, support, update-checking and program information.

Go to Tipro homepage	Surf to Tipro homepage
Go to Tipro support	Surf to Tipro support page
Send mail to support	Send an e-mail to Tipro support
About…	Display About box
Module Context Menu	
Clear Module	Clear the module's configuration
Set all AT/PS2	Fill module with default PS2 contents
Set all RS232	Fill module with default RS232 contents
Set all USB	Fill module with default USB contents
Set default	load default from definition file
RS232 OPOS	Set keys to OPOS standard (RS232 communication)
USB OPOS	Set keys to OPOS standard (USB communication)
Import Text	Import contents from text file
Export Text	Export contents to text file
Key Context Menu	
Clear Key	Clear the key
Cut Content	Cut the key's contents
Copy Content	Copy the key's contents
Paste Content	Paste the key's contents
(Un)Fix Key (only with predefined keys)	Protect key's contents
Make RS232 OPOS key	Set the key to OPOS standard (RS232 communication)
Make USB OPOS key	Set the key to OPOS standard (USB communication)
Load default content	Load predefined contents

Toolbar Shortcuts

In This Chapter

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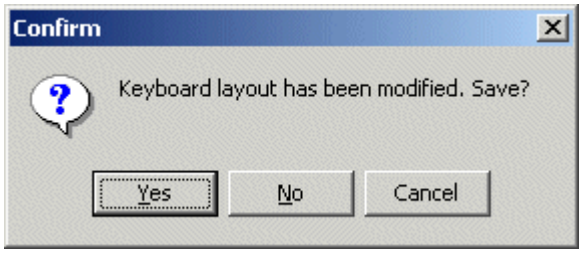
Desktop 44
Device 48
Tools 49
Options 52
Security 58
Windows 73
Help 74
Shortcut Toolbar 76
Module Context Menu (Right click) 76
Key Context Menu (Right click) 80
Key Content Form 81

File

New

Creates a new ChangeMe file. If your previous layout is not saved you will be asked if you want to ***save*** it.

You keep your desktop, but all contents is cleared.

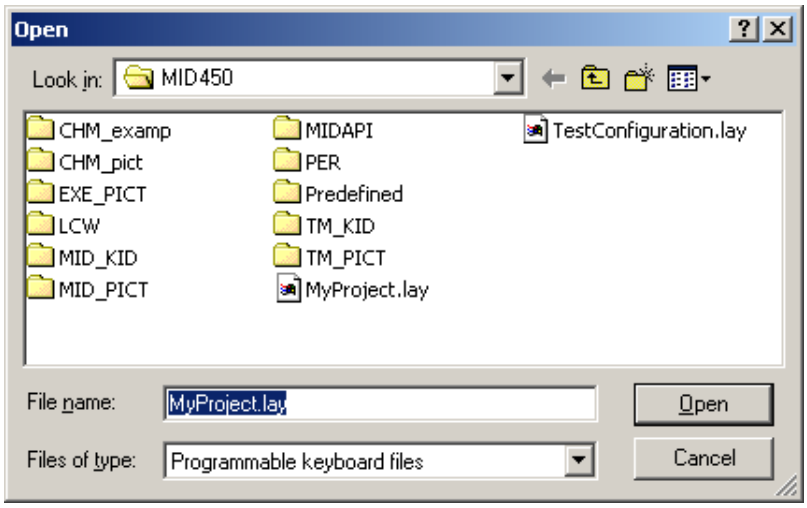


Open

F3

Opens an existing layout (.lay) file. If your previous layout is not saved you will be asked if you want to ***save*** it.

Browse to the .lay file you want to open and press **Open**



Save

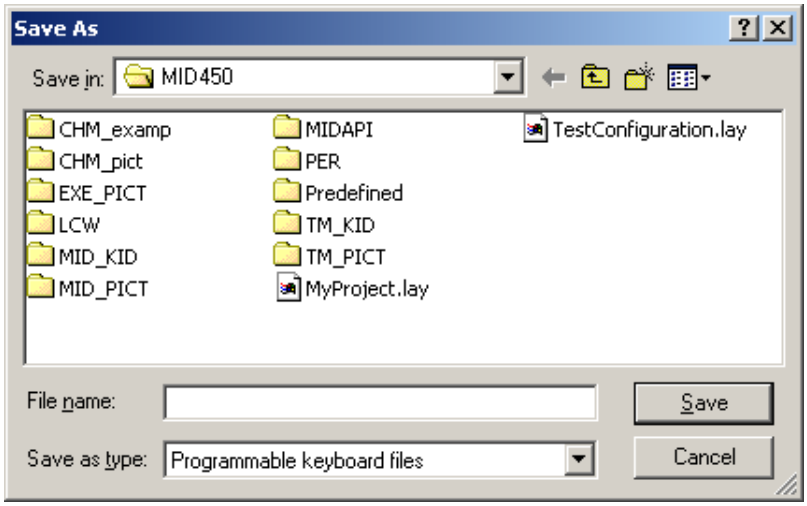
F2

Saves your current file. If you haven't saved your file before, the behavior is the same as ***Save As*** .

Save As

Opens the **Save As** dialog.

Browse to the directory you want to save your layout in and type the filename in the **File name** textbox**.** Then press **Save**.

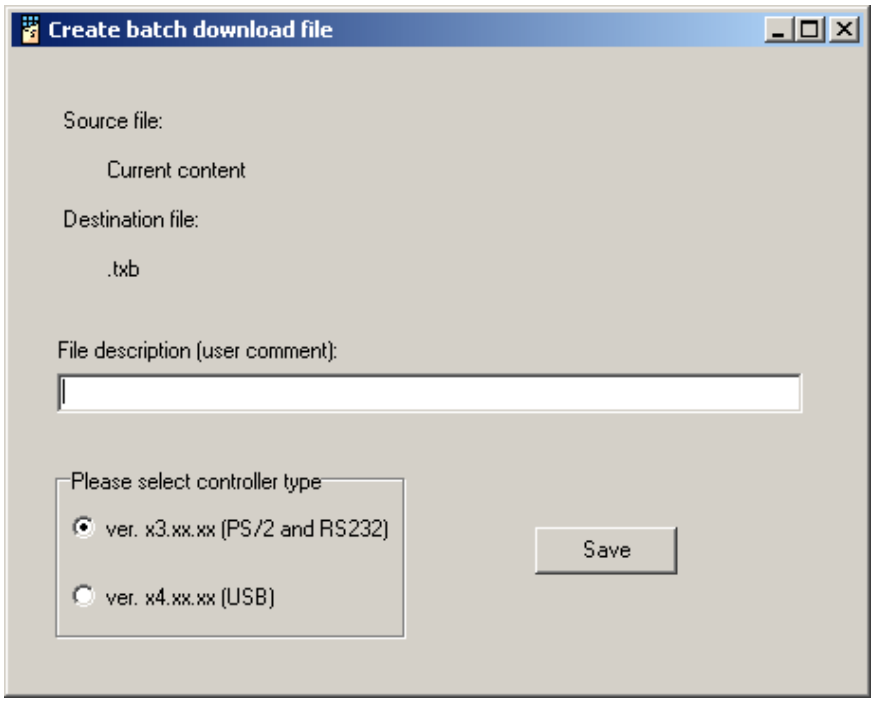


For more information on the different files that are saved, see ***ChangeMe file types***

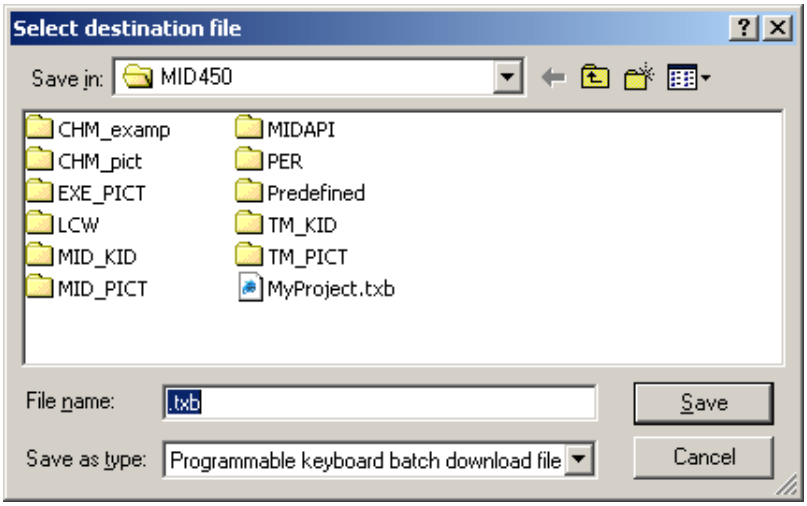
Save as batch update file (TXB)

Saves your current file to a TXB file.

Opens the **Create batch update file** dialog.



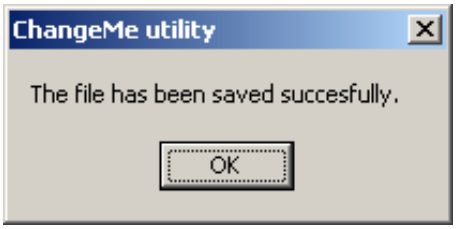
1 Click on the destination file filename. The **Select destination file** dialog opens. Browse to the directory you want to save your layout in and type the filename in the **File name** textbox. Then press **Save**.



2 You can add your comment about the file. Type it in **File description** textbox.

3 Select the **controller type** the TXB file will be created for. It can be either AT/PS2 and RS232 or USB.

4 Press **Save** to create the file.



For more information on TXB file, see ***ChangeMe file types***

Exit

Exits the program ChangeMe. If you haven't save your changes you will be asked if you want to ***save*** .

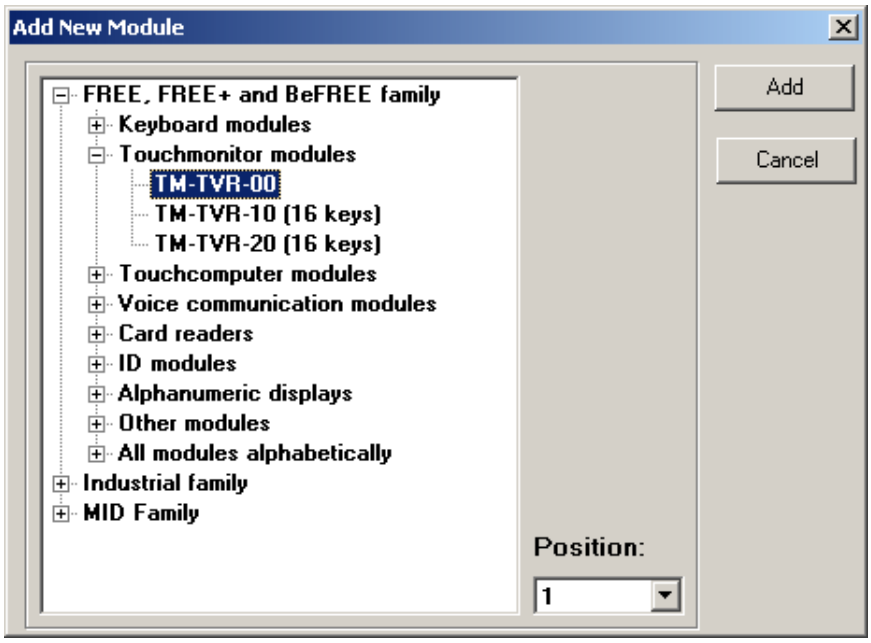
Desktop

When your FREE/FREE+ configuration is connected to your computer you can use AUTO DETECT to detect all modules connected. This procedure is automatically performed when you start ChangeMe.

In off-line mode (no keyboard is connected) You can create and edit a configuration by adding and deleting modules by hand.

Add Module

This command adds a module to your desktop.



1 Choose the product family – FREE/FREE+ or MID –

2 Choose the module category – Touch, Keyboards, Card reader etc –

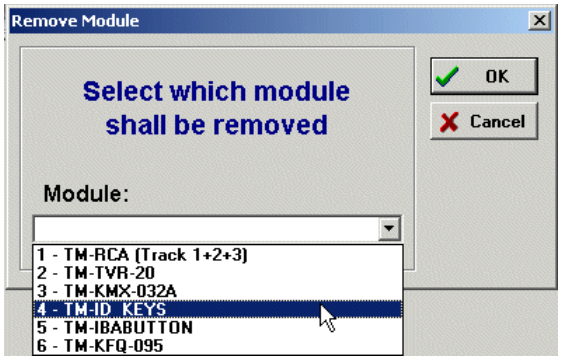
3 Choose the module you want to insert

4 You can specify the position on which the module will be inserted. 1 is left.

5 Press **Add**

Delete Module

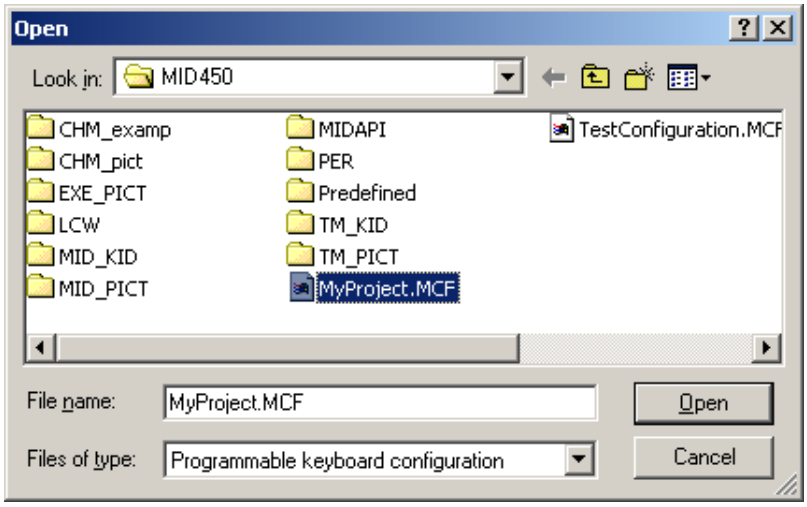
This command removes a module from the desktop.



Select the module you want to remove from the dropdown box and press **OK**.

Open Desktop

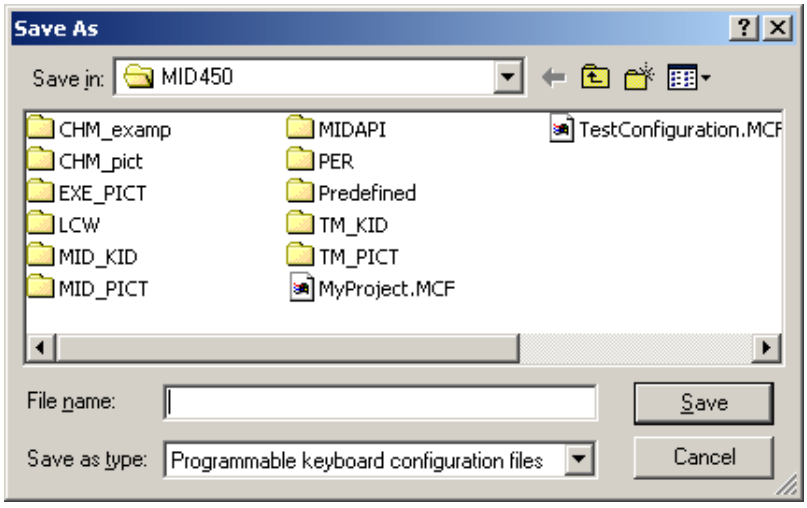
A previously ***saved*** desktop can be loaded with this command.



Browse to the location, choose the file and click **Open**.

Save Desktop

This saves the current desktop to file. After this you can reload it anytime with ***Open Desktop***

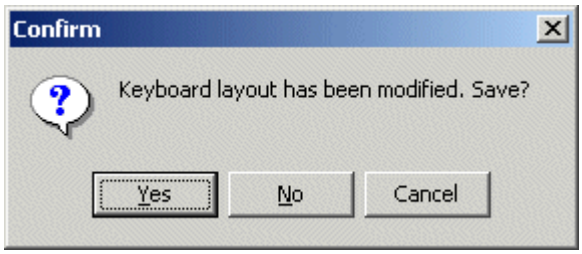


Choose a filename and press **Save**.

Clear Desktop

Clears the desktop. All modules will be removed.

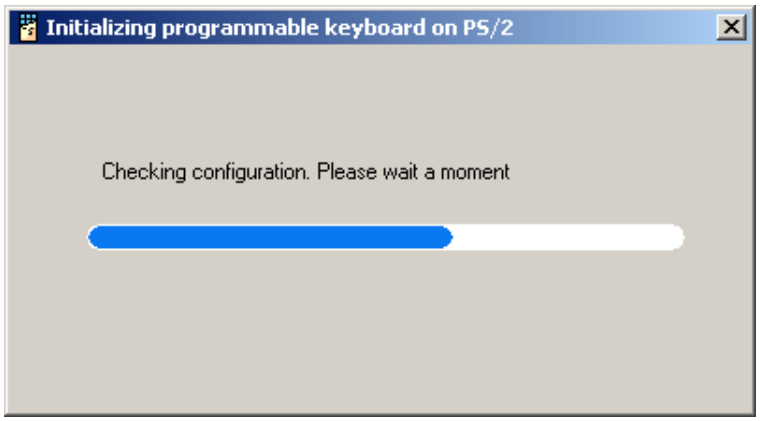
If there are unsaved changes you will be asked to save them.



Auto Detect

This command checks the configuration that is connected to your computer and displays it in the main window.

This procedure is automatically performed when you start ChangeMe.



Autodetect queries the port set under OPTIONS > COMMUNICATIONS PORT

Device

Update keyboard content

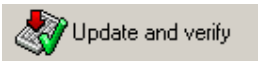
Updates the connected keyboard with the current configuration.

All settings of all modules and all key contents are sent to the Controller and stored in the flash memory.

Stop will cancel the update.

Update uses the communication port set under OPTIONS > COMMUNICATIONS PORT

Update and Verify



Use this command to see if the configuration has been successfully stored in the controller's memory.

This command does exactly what it says: first it performs an UPDATE , then a VERIFY .

Verify

Verify compares the Controllers memory with the configuration and key contents in ChangeMe.

Any differences will be reported.

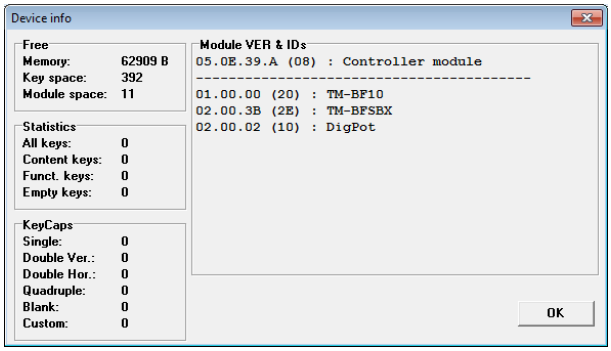
Load content from keyboard

Loads the configuration stored in the Controller's flash memory to ChangeMe's desktop

Info

Displays information about the device.

Information about memory, keys, controller and connected modules.



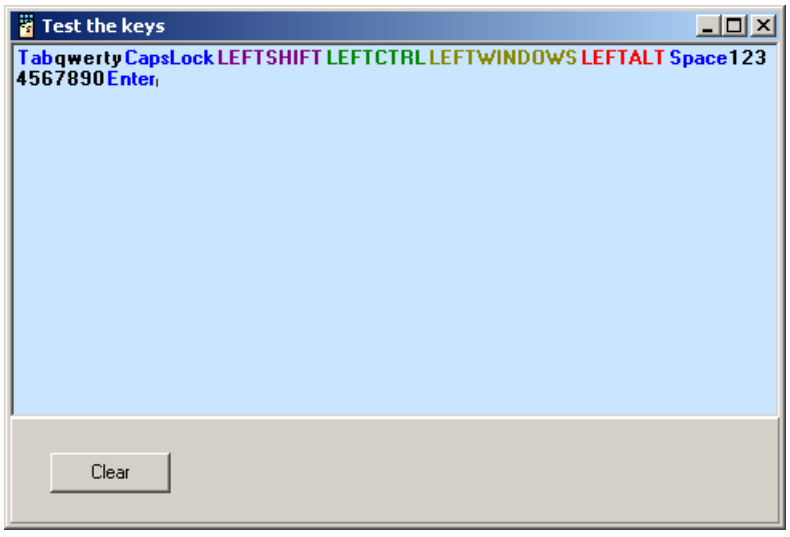
Tools

Tools for testing key contents can be found here.

Two tools for Keyboard content (PS/2 and USB) and one for RS 232.

Scanline

F4



This window shows the Keyboard content (PS/2 and USB) of pressed keys. It captures all keys (also `Shift`, `Control`, `Alt`, `F1`...)

Click in the window and test the keys.

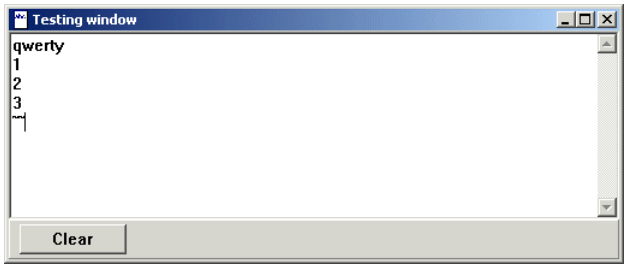
Clear button empties the window.

Press button in upper right corner to close the window.

see ***testing*** for more details

Text Window

`F5`



This window shows the Keyboard contents (PS/2 and USB) of the pressed keys.

Clear empties the text window.

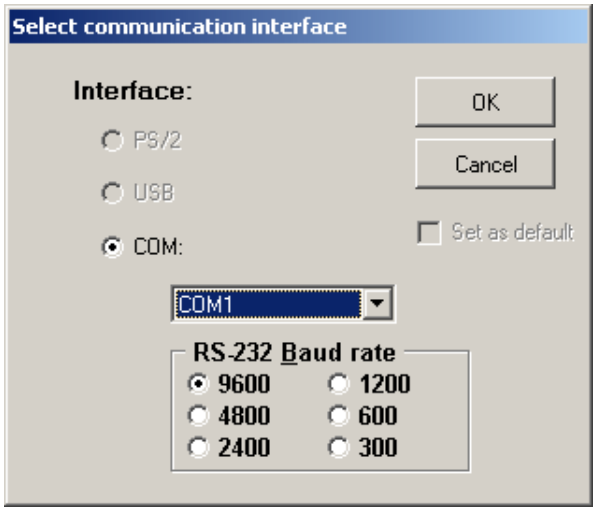
see ***testing*** for more details

TTY Terminal

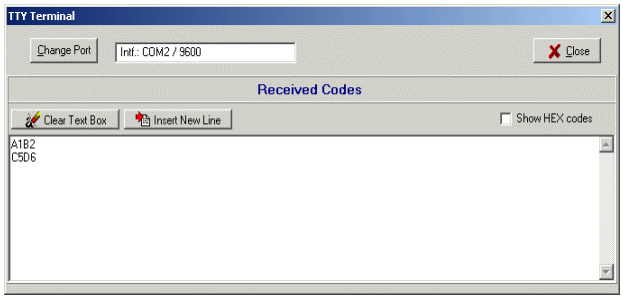
`F6`

This tool is used to test the RS232 contents of keys.

First select the COM port your keyboard is connected to from the Interface dropdown box and the communication speed in the Baud rate section.



Then the terminal window appears



To listen to another COM port, press **Change Port**.

Clear Text Box empties the text area,

Insert New Line starts the next input on the next line.

Select **Show HEX codes** to view the -raw- hexadecimal codes sent to the computer, not the translated ASCII codes.

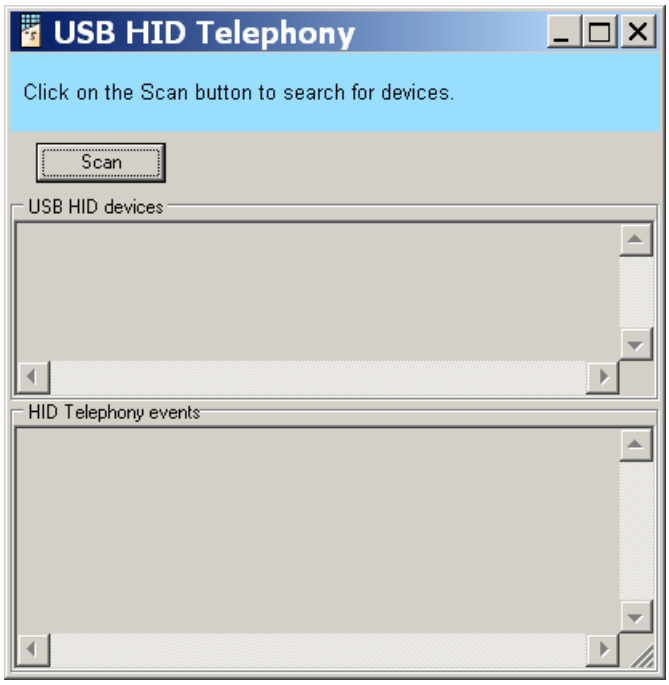
see ***testing*** for more details

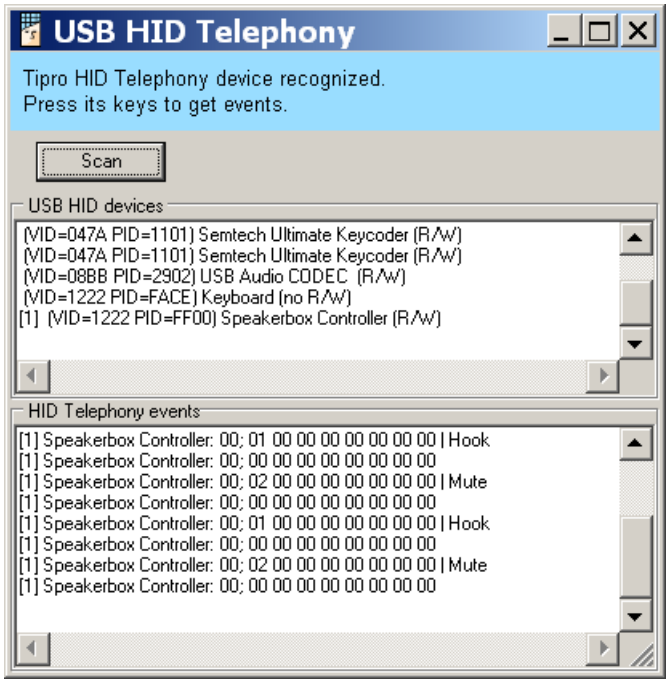
HID Telephony

F7

This tool is used to test the USB HID Telephony contents of keys.

Note: Your modules should support USB HID Telephony to be able to produce HID Telephony contents.



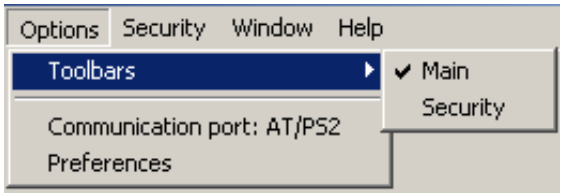


Options

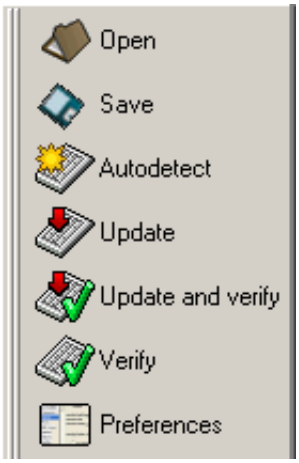
Set program preferences and options here.

Toolbars

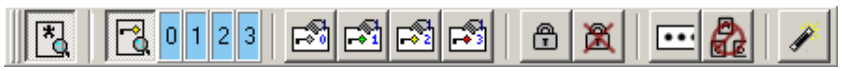
Set which toolbars are visible. There are Main and Security toolbar.



Main (Shortcut) toolbar:

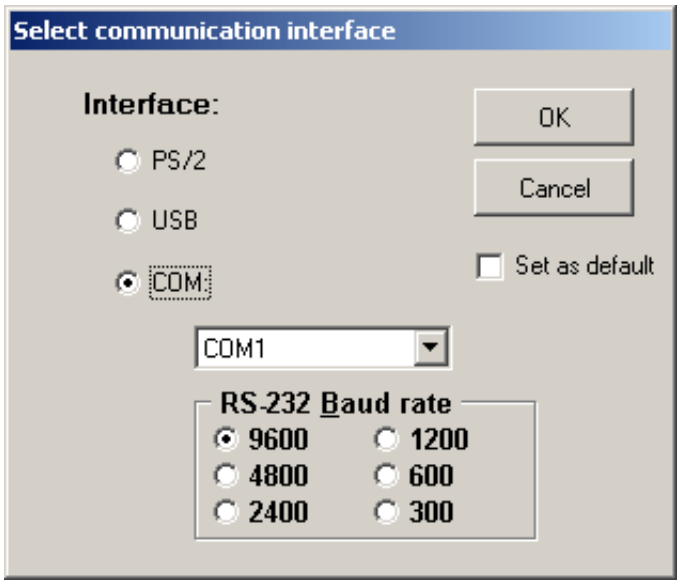


Security toolbar:



Communications Port

Set the communications port used to program the keyboard.



Select the **Interface** you want by checking the radio button.

When you choose a COM port you also have to define the **Baud rate**.

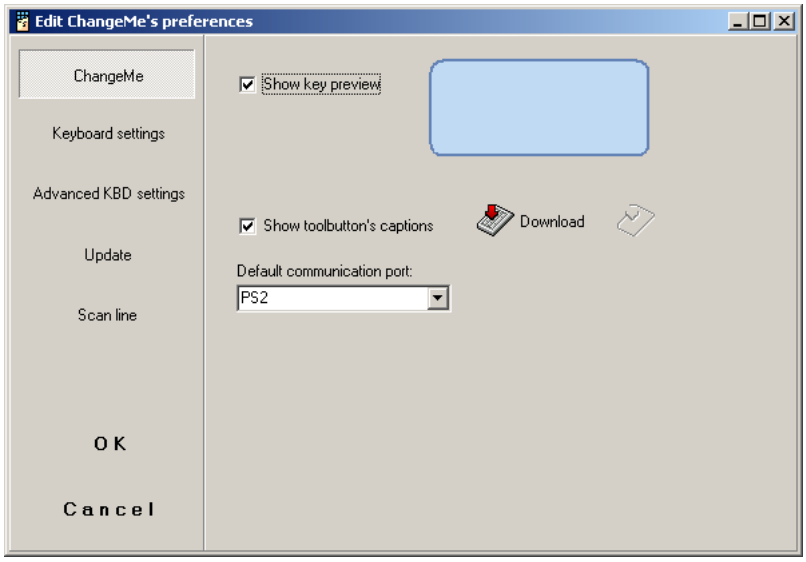
Set as default checkbox sets the selected interface to default. Next time the ChangeMe starts it will search it for a configuration.

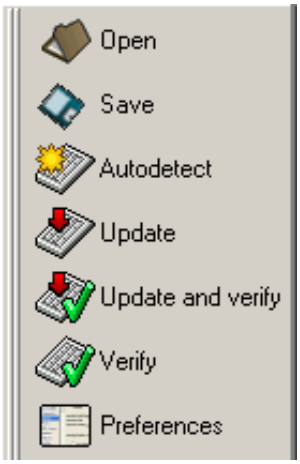
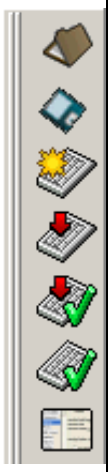
---

note: this interface is independent from the protocol used in the programmed keys.

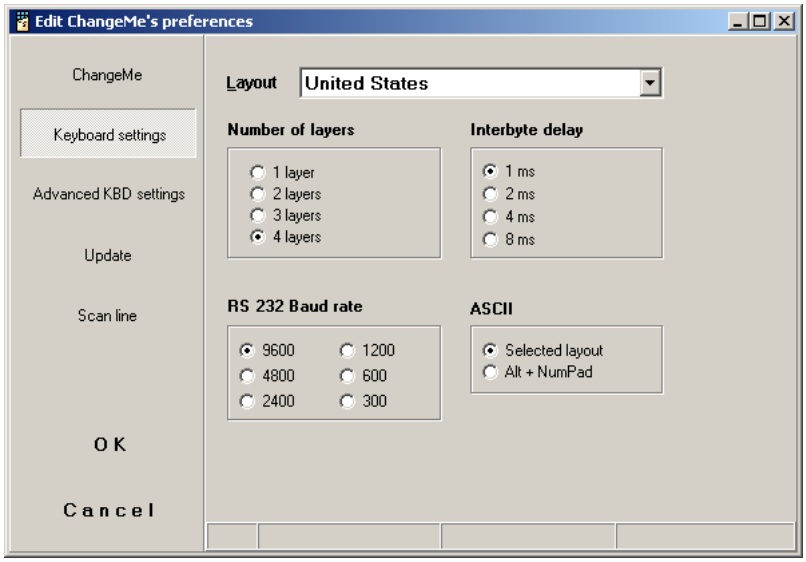
Preferences

ChangeMe Preferences



Show key preview turns the key preview on or off. When this is turned on, you can see the contents of a key by holding the mouse pointer over the key.			
Show toolbutton's captions turn the text next to the toolbutton's icon on or off.		becomes	
Default communication port sets which port is checked when ChangeMe starts.			

Keyboard settings



Choose the international layout that should be used from the **Layout** dropdown box.

The **Number of layers** sets how many layers can be programmed per key (maximum 4)

If the controller is sending codes too fast (this can happen on certain computers) you can select a different **Interbyte delay**. This is the time between two consecutive sent codes. The default is 1 ms.

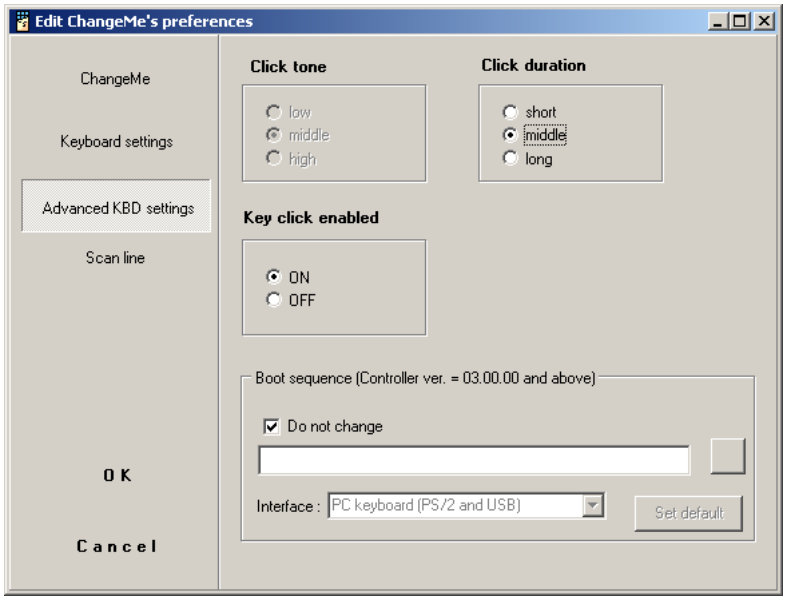
RS232 Baud rate can be set. Default is 9600.

Ascii selects how the ASCII key content is sent to the computer.

It can be as keyboard scan codes with the selected layout (see above),

or as Alt – ASCII sequence

Advanced keyboard settings



The CLICK TONE cannot be changed anymore.

CLICK DURATION sets the click tone to last short, middle long or long.

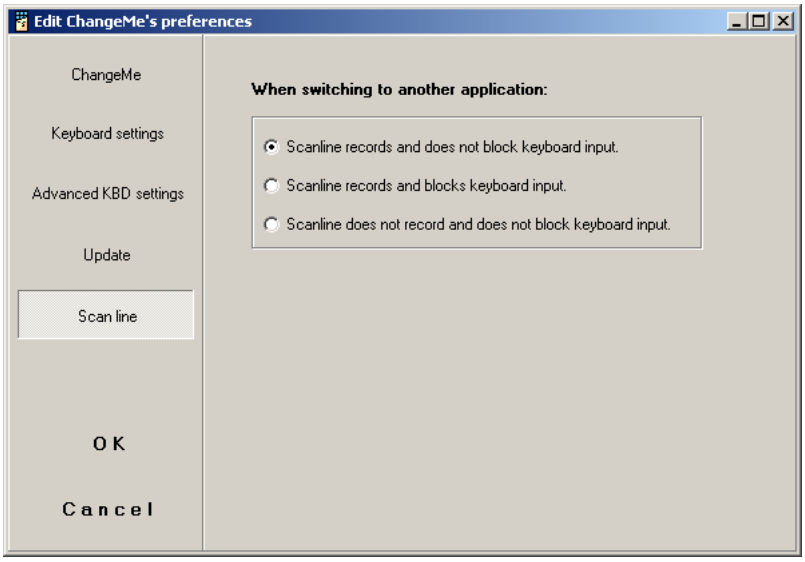
CLICK DEFAULT: By selecting **OFF**, the key click is disabled regardless of click setting on each key.

BOOT SEQUENCE: Here you can define a boot sequence that is send when a keyboard is started up.

Scan line

Behaviour of scanline after changing focus to another application can be set here.

Scanline is a textbox that captures codes of pressed keys.



Security

Security is a feature of USB Controller.

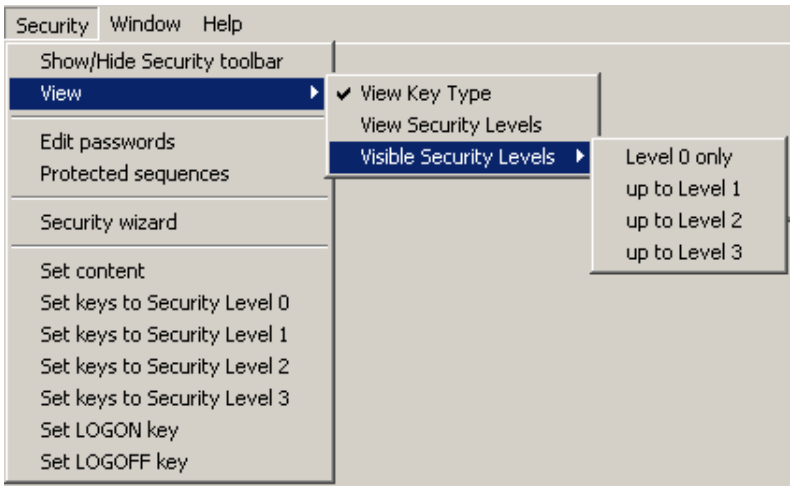
A keyboard must have an USB controller to support security features.

Show/Hide Security toolbar

Shows or hides the **Security** toolbar.

View

0
1
2
3


Security
Window
Help
Show/Hide Security toolbar
View
Edit passwords
Protected sequences
Security wizard
Set content
Set keys to Security Level 0
Set keys to Security Level 1
Set keys to Security Level 2
Set keys to Security Level 3
Set LOGON key
Set LOGOFF key
View Key Type
View Security Levels
Visible Security Levels
Level 0 only
up to Level 1
up to Level 2
up to Level 3

Select which key property is shown on a key. It can be either type, security level or both.

View Key Type Select to show the key type/function.

It is displayed like:

- ***** - Keyboard content (PS/2 or USB)
- **R** - RS232 content
- **C** - custom content
- **Sn** - shift to a layer
- **Ln** - lock to a layer

View Security Levels This command shows the security level for each key

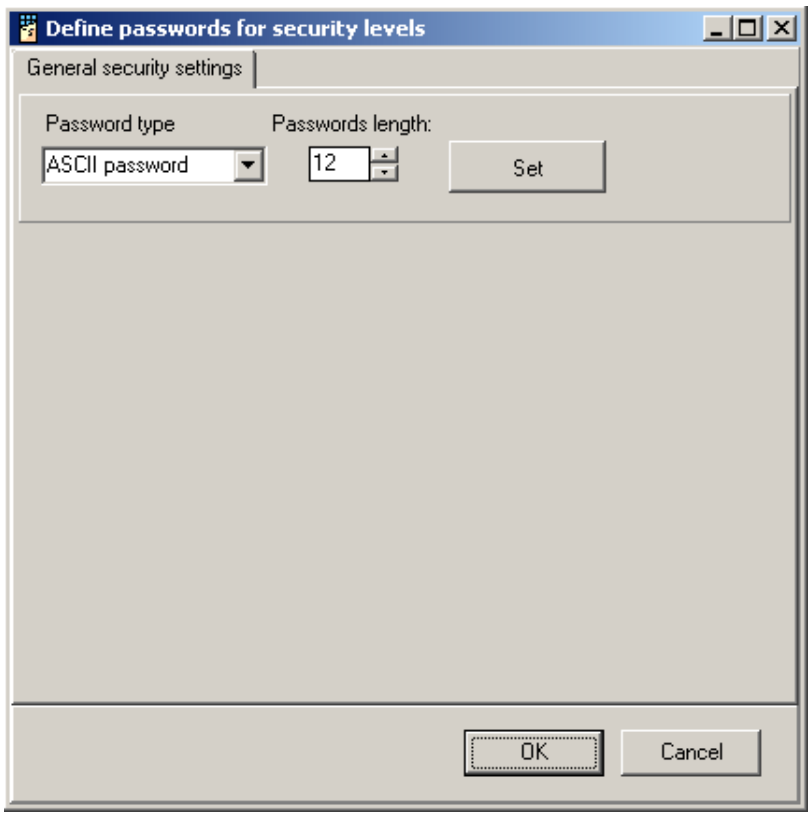
Visible Security Levels Choose which security levels are visible:

- Level 0 only - Keys that are functional in security level 0 are visible
- up to Level 1 - All keys that are functional in security 1 are visible
- up to Level 2 - All keys that are functional in security level 2 are visible
- up to Level 3 - All Keys are visible

Edit passwords

Opens **Define passwords for security levels** dialog. Here you can manage passwords for security levels.

If no passwords have been defined the following dialog appears:



First you have to decide what **Password type** you will use. It can be either ASCII or Key password.

ASCII PASSWORD is composed of ASCII characters (e.g. content of a magnetic card or iButton number).

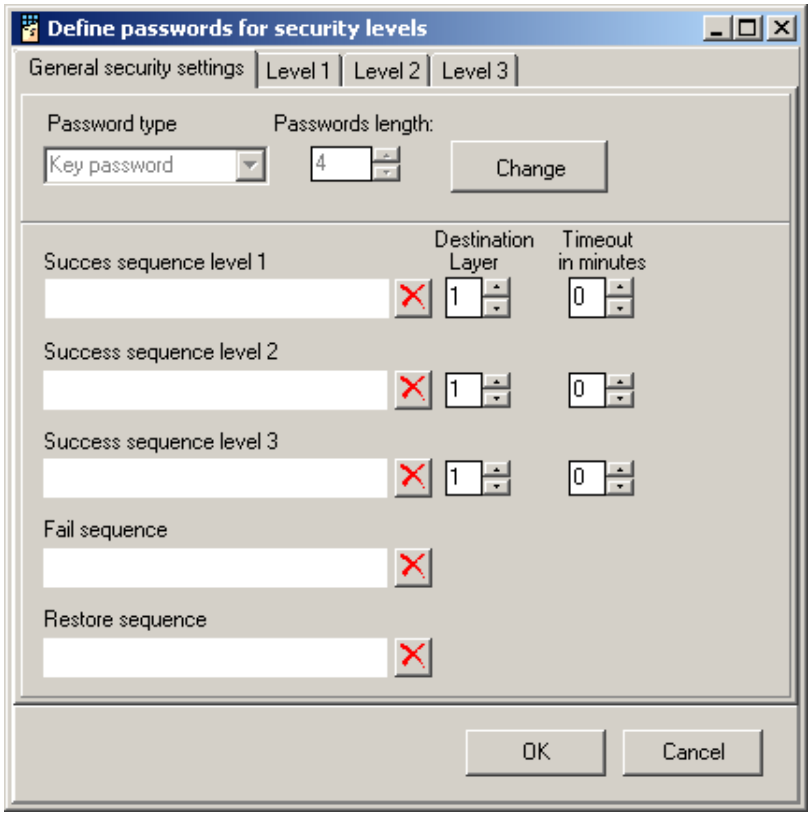
KEY PASSWORD is composed of key strokes (pin code). Content of the keys used is not important.

All passwords must have the same length. In **Password length** editbox you can set it:

- from 1 to 12 for ASCII password
- from 1 to 8 for Key password

Press **Set** (or **Change** if password type/length was changed)

General security settings



For each successfully log to security level the following can be set:

- SUCCESS SEQUENCE LEVEL - content that is sent to the system
- DESTINATION LAYER defines the layer that the keyboard is locked to
- TIMEOUT IN MINUTES - if a keyboard is inactive (no key is pressed) for that time, it is automatically logged off (**0** means never)

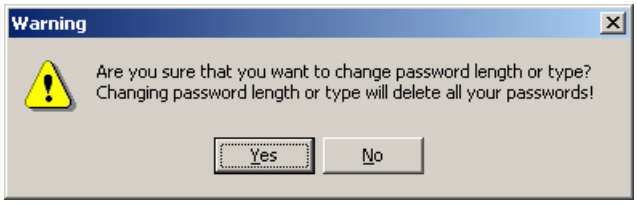
There are also:

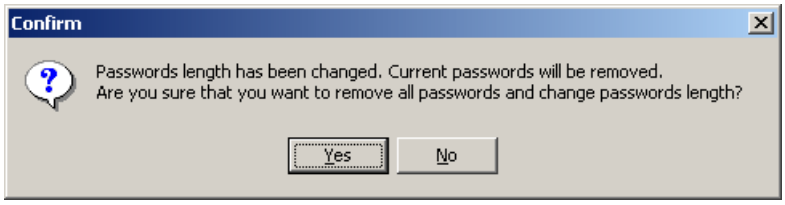
- FAIL SEQUENCE - this content is sent when an unsuccessful log on happens
- RESTORE SEQUENCE is sent when the keyboard is logged off (log to security level 0)

If you would like to change password type or/and length press **Change**.

note: when changing password type/length all current passwords will be removed.

The following Warning/Confirm dialogs can show up:





ASCII password

ASCII passwords are entered manually.

Select the Security level by clicking the tab.

Level tab has 3 sections:

- EDITBOX where you can edit passwords
- BUTTONS: Add, Remove, Replace
- LIST BOX where all passwords are listed

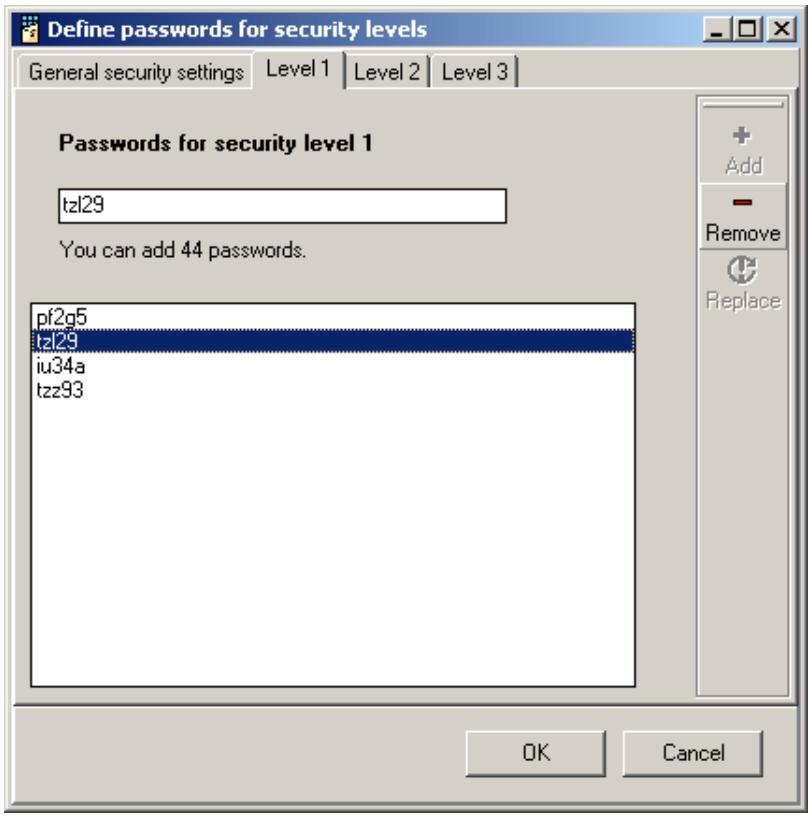
Add a new password

Enter a password into editbox. Its length must be as it was set in **General security setting** tab. Click **Add** to add the password to the list. If a password already exists, the following dialog shows up:

If you want to add this password to this Security level, you have to remove it first from the list where it already exists.

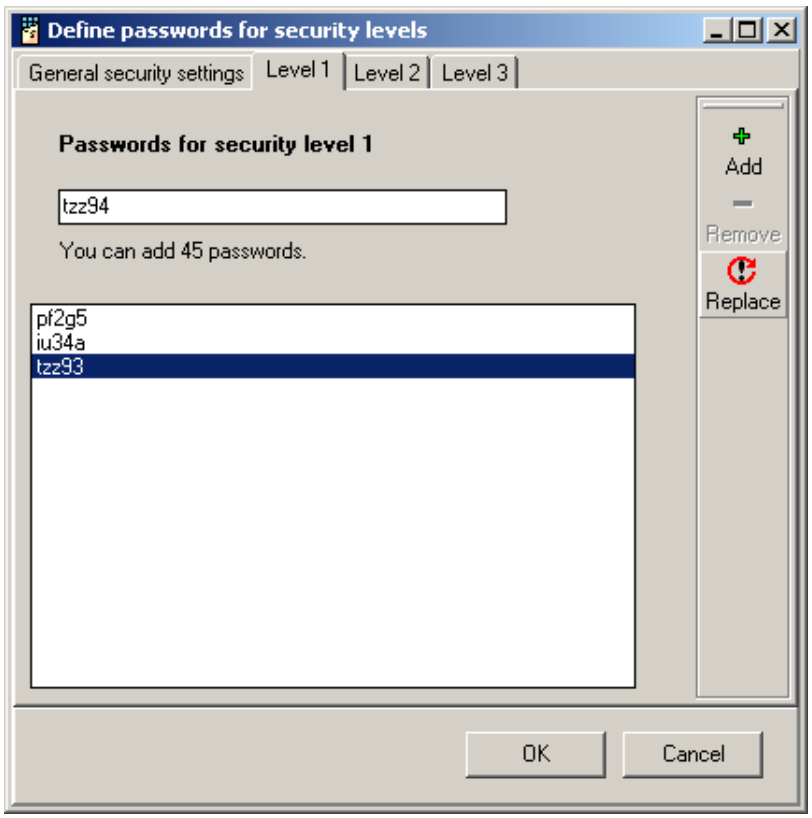
Remove a password

To remove a password from password list: click the password you want to delete and press **Remove**.



Change a password

Click the password you want to change. Edit it in editbox and press **Replace**.



Key password

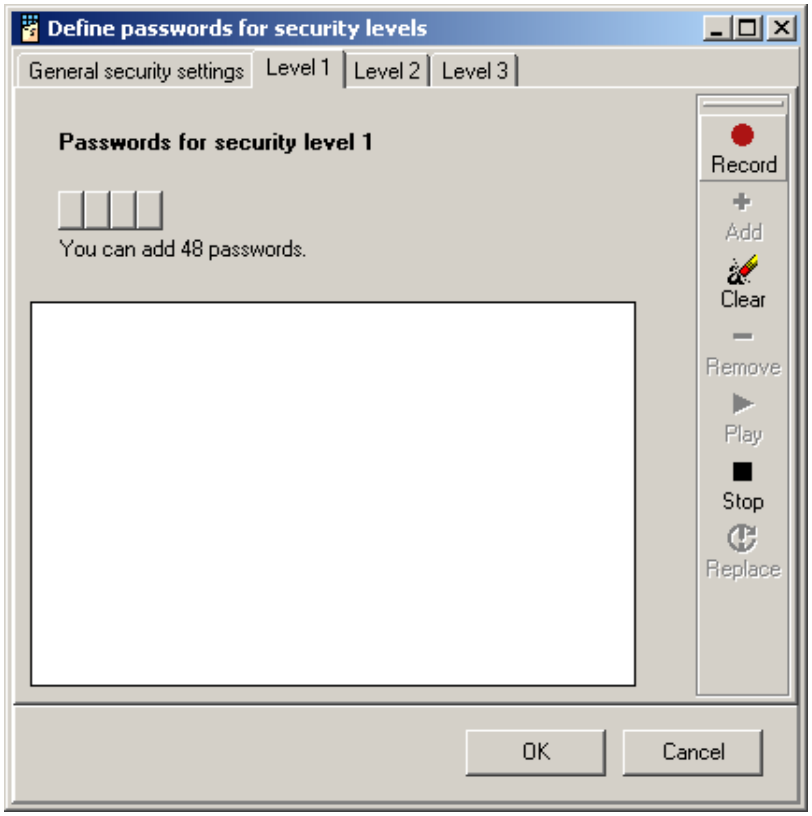
Select the Security level by clicking the tab.

Level Tab has 3 sections:

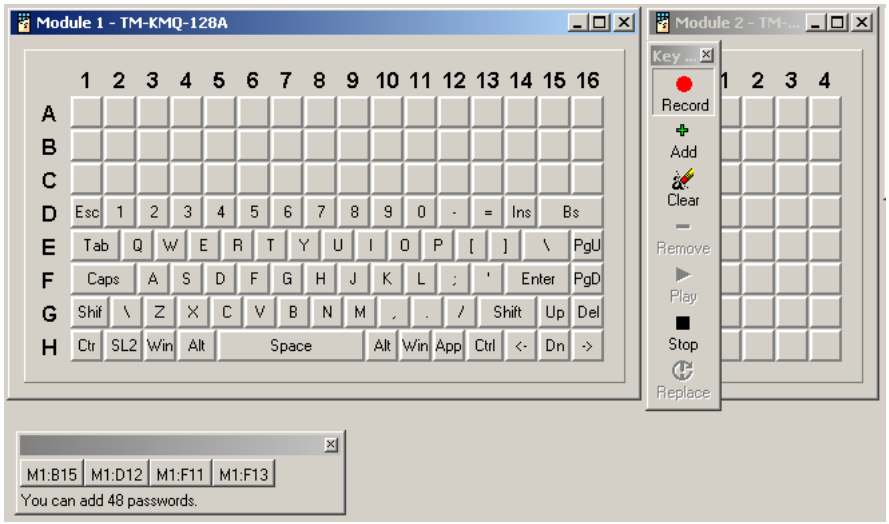
- KEYS (their number matches to the password length) where you can edit a password
- BUTTONS: Record, Add, Remove, Play, Stop, Replace
- LIST BOX where all passwords are listed

Add a new password

Press **Record** to add passwords by clicking the onscreen modules' keys.



The modules appear:

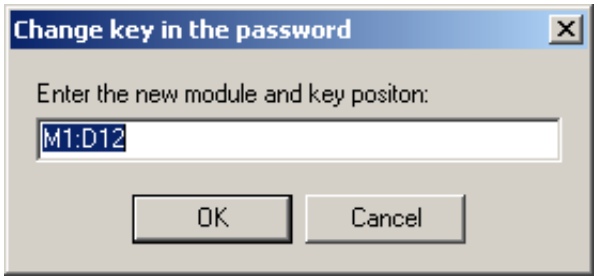


Simulate the password by clicking the keys. Press **Add** to add it to the list.

Clear button clears keys that represent password.

When you are finished, press **Stop**.

You can edit password keys manually. Click the key representing part of the password you wish to change. **Change key in the password** dialog opens:



Each key code consist of two parts which are separated by colon (:). First part always starts with letter M that is followed by module number in configuration. The second part represents a key position in the module: row (from A to H) and column (from 1 to 16). So a key is defined by module number, row and column.

If a password already exists, the following dialog is shown:

If you want to add this password to this Security level, you have to remove it first from the list where it already exists.

Remove a password

Click the password in a password list that you want to delete and press **Remove**.

Demonstrate a password

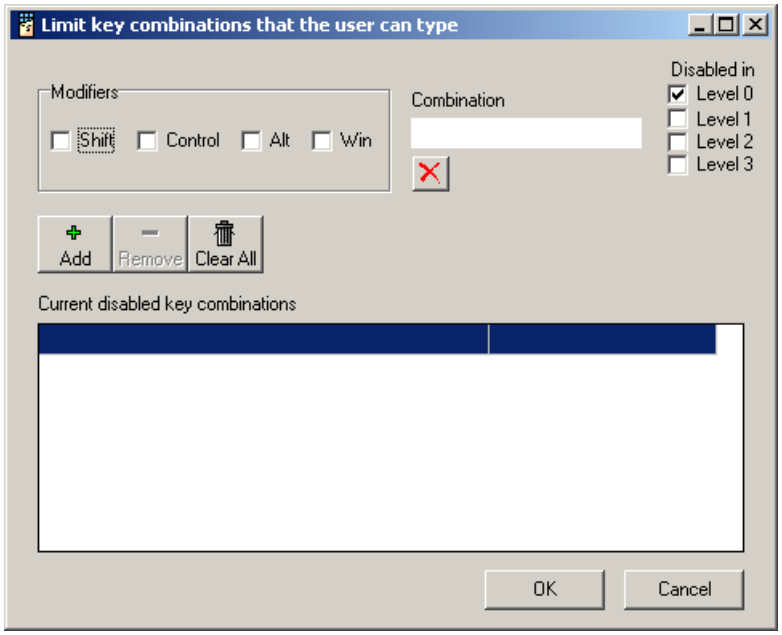
Select a password from the list. Press **Play**. A password key sequence will be demonstrated.

Change a password

Click the password you want to change. Edit its keys by clicking them and press **Replace**.

Protected key combinations

Opens **Limit key combinations that the user can type** dialog.



Here you can define the key combinations that are disabled in certain Security Level.

Important: A key combination is a group of keys pressed at the same time.

The dialog has four sections:

- MODIFIERS - Check which modifiers with the key in combination box present a disabled key combination.
- COMBINATION - enter the last part of disabled combination. Press to clear the edit box.
- DISABLED IN - check security levels where the key combination is disabled and press **Add** to add it to the list.
- CURRENT DISABLED KEY COMBINATIONS shows the already defined combinations. Use **Remove** and **Clear All** to delete them from the list.

➢ Example 1: if you want to disable `Control+A` in security level 0 and 1:

1. check Control in Modifiers section
2. enter `A` in Combination editbox
3. check Level 0 and Level 1
4. press **Add**

In this example it doesn't matter which Control key is pressed, the `Control+A` sequence is disabled for left and right Control key.

➢ Example 2: if you want to disable `RightAlt + E` in security level 0 and 1:

1. uncheck all modifiers
2. enter `RightAlt + E` in Combination editbox
3. check Level 0 and Level 1
4. press **Add**

In this example only `RightAlt + E` is disabled, `LeftAlt + E` is enabled.

Important: To disable all `Control + Alt + Del` combinations, check `Control` and `Alt` checkboxes and enter `Del` into editbox. If there is a Decimal sign on numeric key pad, it should also be disabled: `Control + Alt + NumDecimal`

Security wizard

Opens the **Security Wizard** window. Wizard will guide you to set security options for your configuration.

Set content

Changes the mouse pointer to normal arrow (back from **Set keys to Security Level**). So that you can define key contents by clicking the key.

Note: Normally a mouse cursor is in **Set content** state.

Set keys to Security Level 0

Select the keys for Security Level 0.

These keys are always enabled.

Set keys to Security Level 1

Select the keys for Security Level 1.

These keys are disabled in Security Level 0 and enabled in other three.

Set keys to Security Level 2

Select the keys for Security Level 2.

These keys are enabled in Security Level 2 and 3; and disabled in 0 and 1.

Set keys to Security Level 3

Select the keys for Security Level 3.

These keys are enabled only in Security Level 3.

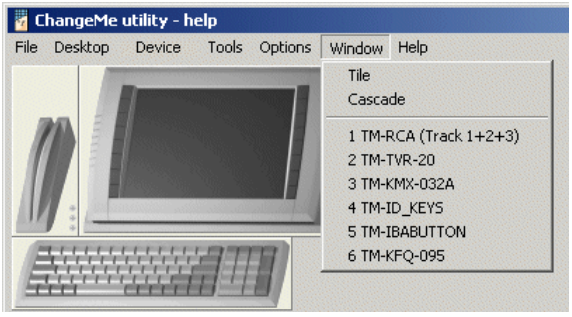
Set LOGON key

Select the log on key. The keyboard will expect the password after pressing this key.

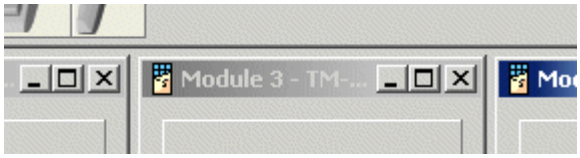
Set LOGOFF key

Select the log off key. The keyboard will return to Security level 0 after pressing this key.

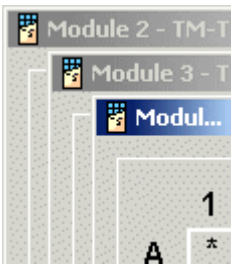
Windows



TILE opens all the module windows and puts them next to one another.



CASCADE opens all Module windows cascading (partly overlapping)



Selecting one module in the MODULE LIST opens that module window.

Help

In the HELP menu you can find this help file, support, update-checking and program information.

ChangeMe Help

F1

Shows this help

Go to Tipro home page

Opens your internet browser and loads Tipro's ***home page*** http://www.tipro.net.

Go to Tipro support

Opens your browser and loads Tipro's ***support page*** http://www.tipro.si/download/.

Send mail to support

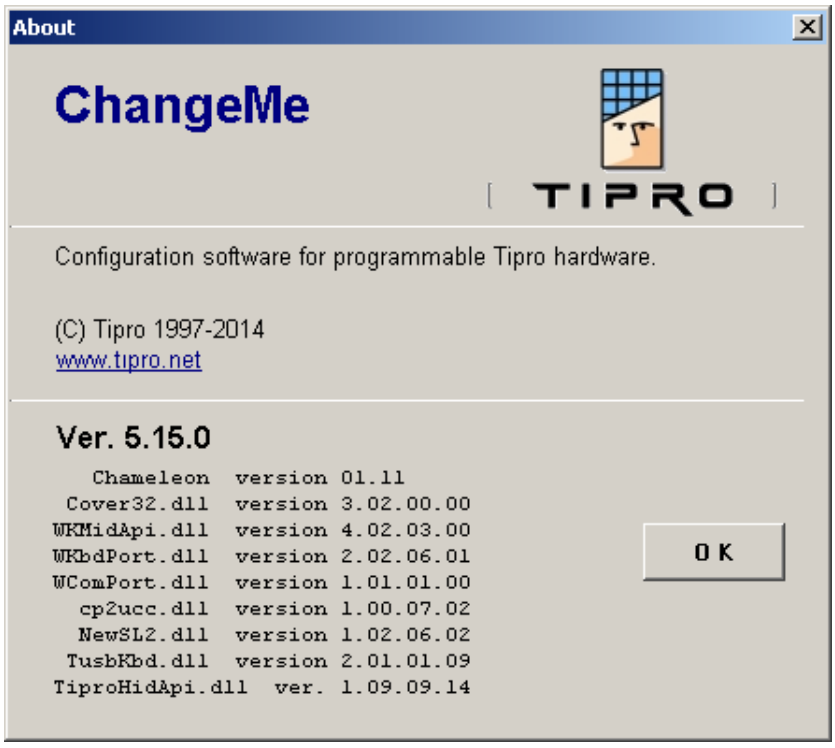
Opens your default e-mail program and creates a new message addressed to Tipro's support team.

Type your question in the message body and send it.

When you have a question about ChangeMe, please also include the following:

- ***Version*** of ChangeMe
- DEVICE > INFO
- Operating system that you use
- Kind of computer (desktop/laptop)

About…



The program version is shown in **bold**, the versions of the other program modules –dll's and Chameleon configuration utility- are shown beneath that.

Press **OK** to close the window.

Shortcut Toolbar

Toolbar Shortcuts

	FILE > OPEN
	FILE > SAVE
	DESKTOP > AUTO DETECT
	DEVICE > UPDATE KEYBOARD CONTENT
	DEVICE > UPDATE AND VERIFY
	DEVICE > VERIFY
	OPTIONS > PREFERENCES

Module Context Menu (Right click)

This is the menu that appears when you click with your right mouse button on the module's icon.

Clear Module

This command empties the module's contents and sets all keys to their default size.

Set all AT/PS2

Loads all the keys with a default PS2 contents. This ascending numbering, starting from the upper-left corner, can be one of the following:

- A1..H16
- 1..128
- Physical A1..H16
- Physical 1..128

Set all RS232

Loads all the keys with a default RS232 contents. This ascending numbering, starting from the upper-left corner, can be one of the following:

- A1..H16
- 1..128
- Physical A1..H16
- Physical 1..128

Set all USB

Loads all the keys with a default USB contents. This ascending numbering, starting from the upper-left corner is the following:

- a1 ... hg

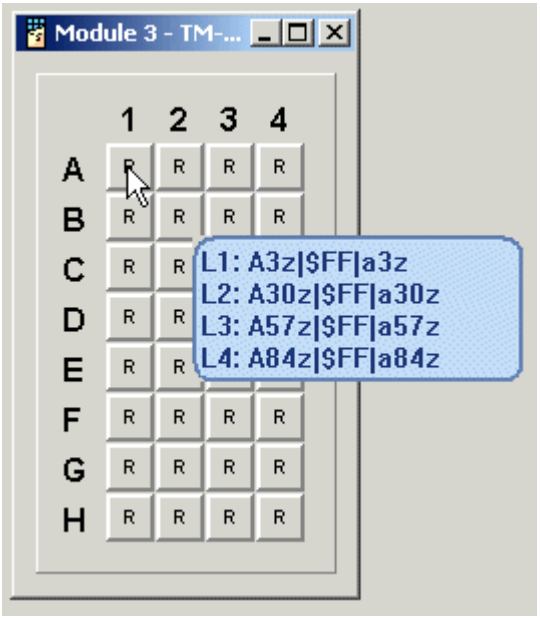
Set default

Loads the module predefined configuration.

This only has effect for modules that actually have a predefined configuration, like the Qwerty modules.

RS232 OPOS

This command sets all the keys to the RS232 OPOS default.

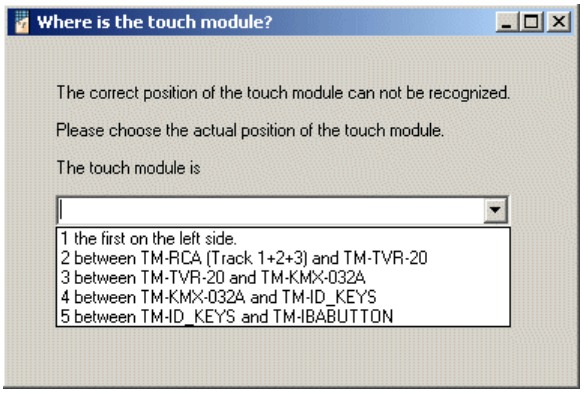


The options are:

▪ All layers	Fill all layers with OPOS values
▪ Layer 1	Fill just layer 1 with OPOS values
▪ Layer 2	Fill just layer 2 with OPOS values
▪ Layer 3	Fill just layer 3 with OPOS values
▪ Layer 4	Fill just layer 4 with OPOS values

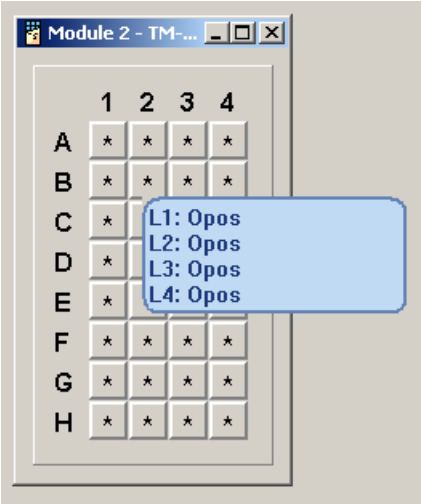
You might be prompted to give the physical location of the Touch (FREE+) module (ChangeMe cannot detect this)

Choose the position from the dropdown box and press **OK**.



USB OPOS

This command sets all the keys to the USB OPOS default.

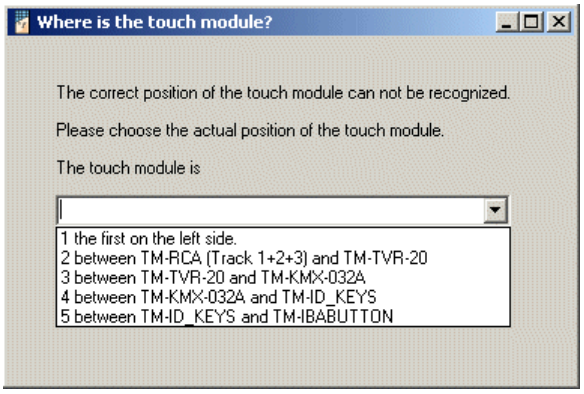


The options are:

▪ All layers	Fill all layers with OPOS values
▪ Layer 1	Fill just layer 1 with OPOS values
▪ Layer 2	Fill just layer 2 with OPOS values
▪ Layer 3	Fill just layer 3 with OPOS values
▪ Layer 4	Fill just layer 4 with OPOS values

You might be prompted to give the physical location of the Touch (FREE+) module (ChangeMe cannot detect this)

Choose the position from the dropdown box and press **OK**.



Import Text

Import the key contents for this module from a text file.

This text file can be created by ***exporting*** key contents of a module

Export Text

Exports the module's key contents to a text file.

This text file can later be used to import key contents for a whole module or for a part of the keyboard

Key Context Menu (Right click)

This menu appears when you right-click the key.

Clear Key

Empties the key's contents. The size of the key is not altered.

Cut Content

Cuts the key's contents. The contents can be ***pasted*** to other keys.

Effectively the same as a combined COPY and CLEAR Key.

Copy Content

Copies the key's contents. The contents can be ***pasted*** to other keys

Paste Content

Pastes the key contents currently in memory to the key. Present contents will be overwritten.

Make RS232 OPOS key

Sets the contents of the key to its corresponding **RS232 OPOS** value.

You might be prompted to set the position of the Touch (FREE+) module, because ChangeMe could not detect that.

Make USB OPOS key

Sets the contents of the key to its corresponding **USB OPOS** value.

You might be prompted to set the position of the Touch (FREE+) module, because ChangeMe could not detect that.

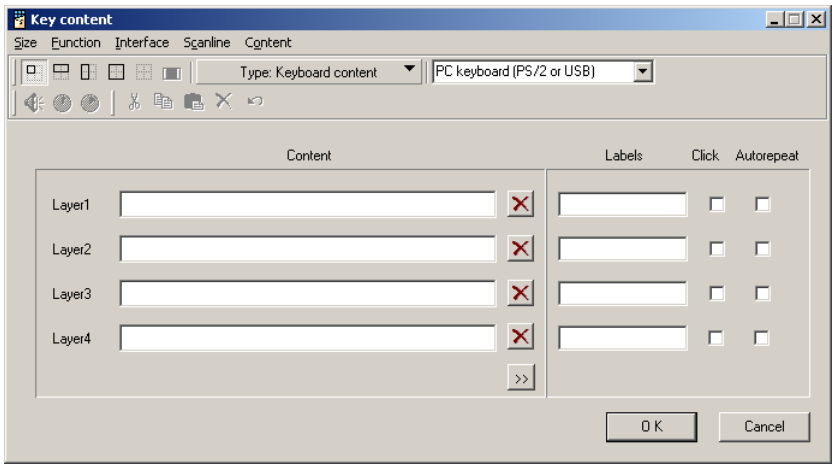
Load default content

Enables you to load content from a text file, starting with the current key as the upper-left.

Use this to place for instance the numpad layout anywhere on a keyboard

Key Content Form

Key content form opens when you click the key in a module view. Here you can define key settings.

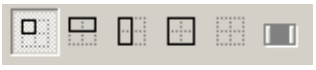


Menu structure

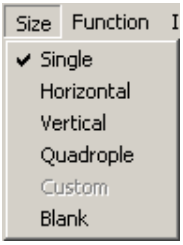
SIZE	Defines the key shape
FUNCTION	Defines the key type
INTERFACE	Defines the interface the codes are send through
SCANLINE	Manages the scanline
CONTENT	Adds special content

Size

You can select the key size from the toolbar:



or from the SIZE menu:



Define the key shape. It can be:

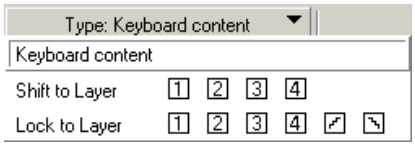
- a single key (1 x 1 key)
- a double horizontal key (1 x 2 keys)
- a double vertical key (2 x 1 keys)
- a quadruple key (2 x 2 keys)
- a custom key (custom sized key in qwerty part)
- a blank cover (blocked key)

The neighbouring keys have to be empty to make one large key

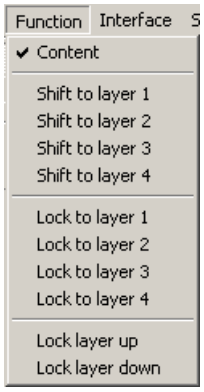
Function

Define key function

from TYPE dropdown menu in the toolbar:



or from the FUNCTION menu:



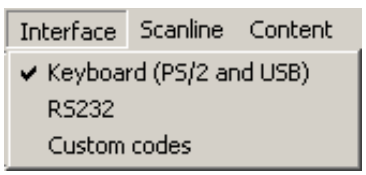
A key can have the following functions:

- CONTENT key has contents defined by user
- SHIFT TO LAYER key shifts to a specific layer while the key is held down. If another key is pressed, its content of shifted layer is sent. After the shift to layer key is released, the keyboard restores the layer state before pressing the key. (like CapsShift key)
- LOCK TO LAYER key switches to a specific layer. The keyboard remains in this layer after the key is released (like CapsLock key).
- LOCK LAYER UP or DOWN locks to one layer higher or lower.

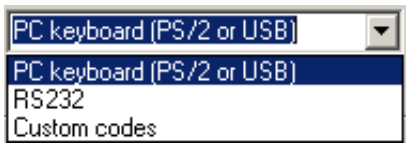
Interface

Interface defines how the code is sent to the computer. It should be selected accordingly to the type of your Controller.

It can be set from the INTERFACE menu:



or from the toolbar:



The following options are possible for keyboards:

- Keyboard (PS/2 and USB)
- RS232
- Custom codes

See ***interfaces*** (see "Interface" on page 100) for details.

Scanline

Here you can edit content of the currently selected scanline.

The commands can be selected from the toolbar:

or from the Scanline menu:

To manage content you can use standard edit commands: CUT, COPY, PASTE, DELETE and UNDO.

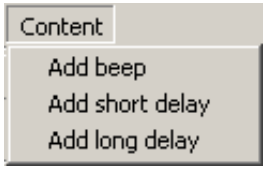
In scanline menu you can set mode and view options for the scanline. See ***Scanline options*** for details.

note: These commands are enabled when scanline is active.

Content

Here you can add special content to the current scanline. Commands can be selected from the toolbar:

or from the CONTENT menu:

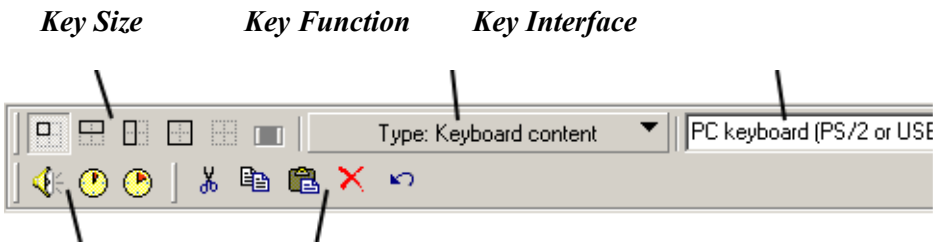


You can add beep, short (100 ms) or long delay (1 s).

note: These commands are enabled when scanline is active.

Toolbar

Toolbar of the Key content has the following sections:

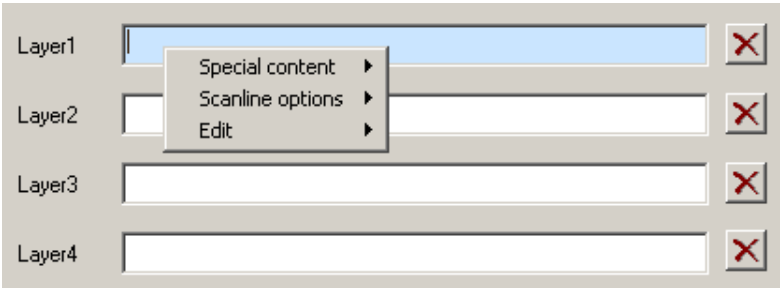


Scanline

Scanline is a special tool, which captures keyboard input.

Scanline context menu (Right click)

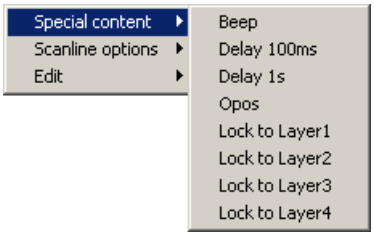
By right-clicking into the scanline (interface must be set to PC Keyboard) the following context menu shows:



Here you can:

- add SPECIAL CONTENT,
- set SCANLINE OPTIONS and
- EDIT the content itself.

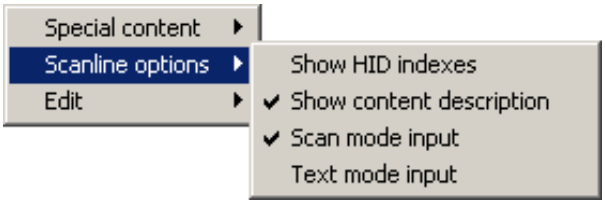
Special content



Here you can add special content (like BEEP, short and long DELAY) to the current scanline.

Some options can be used only with USB controller. These commands are USB OPOS and LOCK TO LAYER.

Scanline options



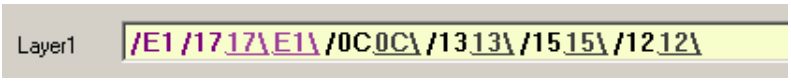
Here you can select

- description type
- manual or scan mode.

Key codes can be displayed as CONTENT DESCRIPTION (Shift key as LEFTSHIFT, q key as q...) or as HID INDEXES (Shift as /E1 E1\, q key as /14 14\). "/" means make code and stands in front of the code, "\" means break code and stands after the code.

Content description:

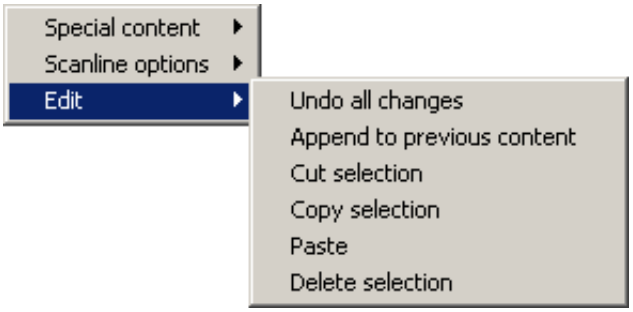
The same content in HID indexes:



Input can be set to SCAN MODE - scanline scans the keys pressed - or you can edit them by writing their make and break HID indexes (TEXT MODE INPUT).

Edit

Here you can edit the scanline content.



UNDO ALL CHANGES restores the content before entering the scanline

APPEND TO PREVIOUS CONTENT - By default previous content is deleted after entering the scanline. If APPEND TO PREVIOUS CONTENT is selected, new content is added at the end of previous one.

CUT SELECTION removes the selected content and puts it to a clipboard, so it can be pasted somewhere else

COPY SELECTION puts the selected content to a clipboard, so it can be pasted later

PASTE pastes the previously copied/cut content from clipboard to the current content

DELETE SELECTION removes the selected content

Some options are disabled if nothing is selected in scanline or if there is no content in the clipboard.

USB HID Telephony content

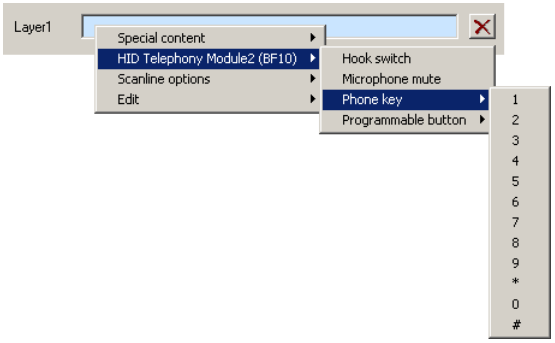
USB HID Telephony content is shown if there is a module that supports it in configuration.

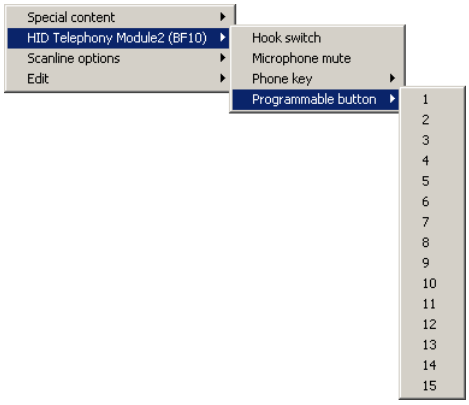
The following modules support USB HID Telephony:

- all versions of BeFREE 22 touchcomputers
- all versions of BeFREE 20 touchcomputers
- all versions of BeFREE 10 touchcomputers
- Speakerbox modules:
  - TM-SpeakerBox with Telephony
  - TM-SpeakerBox with Telephony (without gooseneck microphone)
- Handset modules:
  - TM-Handset with Telephony
  - TM-Handset with Dialpad and Telephony

The following USB HID Telephony contents can be defined:

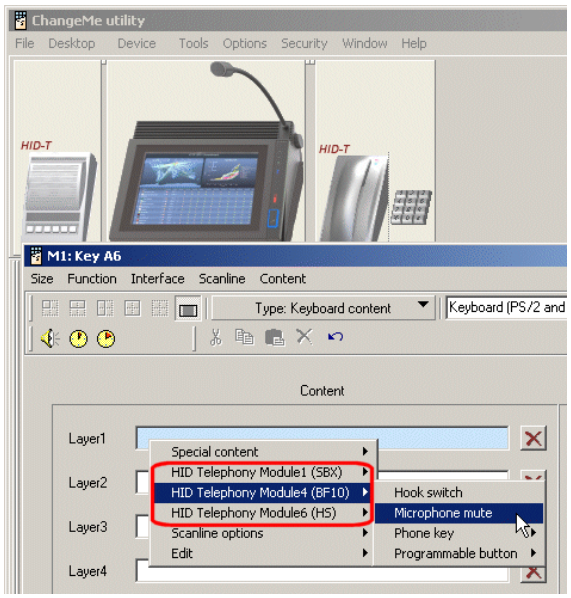
- Telephony Hook switch
- Telephony Microphone mute
- Telephony Phone keys (from 0 to 9, * and #)
- Telephony Programmable buttons (from 1 to 15)





Note: There can be pressed only one Telephony Phone key at a time. If there is pressed another, then the previous is released. Also Programmable button can be pressed one at a time. Other HID Telephony contents (Hook switch and Microphone mute) can be pressed at the same time.

If there is more then one Telephony module in configuration, then there are displayed more options. It can be defined from which device (HID Telephony interface) the event is sent.



CHAPTER 6

Programming

All aspects of programming a FREE/FREE+ configuration are explained in this chapter. Starting with general information, then the different module types are explained more detailed. Under advanced techniques you can find ways to improve efficiency when programming more than one configuration.

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General

This chapter covers the basics of programming a module. How to select a module or key and how to enter contents.

Desktop

When you start the program, autodetect will find the FREE/FREE+ configuration connected to your computer. The detected modules are displayed at the top of the window.

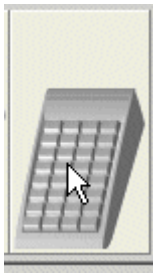
Alternatively you can manually define your configuration, off-line, by ***adding*** or ***deleting*** modules. Go to Menu: DESKTOP**.**

Desktops can be ***saved*** and (re-)***opened*** .

When a desktop is saved, only the modules and their position are saved, *not* the key contents.

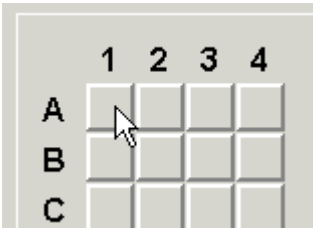
Select a module

A module can be selected by clicking it with the mouse. Depending on the module, different windows can open. Programming of the different modules will be discussed below.



Select a Key

A key can be selected by clicking on it with the mouse.



Enter contents

To enter key contents you have to have a standard keyboard connected to the computer. You can connect the keyboard to the FREE/FREE+ configuration.

If you are using a Chameleon without a PS/2 pass-through port, you can connect the keyboard directly to the computer and connect the Chameleon just with the RS232 cable when programming it.

Save a configuration

Save a configuration so you can use it more than once. The information is stored in a .lay file, which can be opened again.

Update

After you are finished defining your FREE/FREE+, update the Controllers memory with new configuration. Once the Controller is updated the keyboard can be used independently from ChangeMe.

Testing

Update your configuration to the keyboard.

At Menu: TOOLS you can find two options for testing Keyboard content (AT-PS/2 and USB) and one, a terminal, for RS232.

To test AT/PS2 and USB contents choose TOOLS > TEXT WINDOW or TOOLS > SCANLINE .

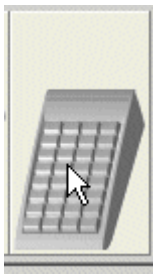
Test the RS232 contents with TOOLS > TTY terminal.

Try all the modules. Pressing a key, inserting an iButton or a card and turning a key; the contents shows up in the window.

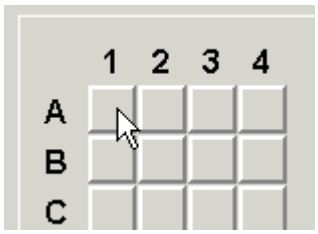
Programming a Keyboard

Each keyboard can have up to 4 layers of key definitions. This means that each key can have –but does not need to have- 4 different contents. (Think of the Shift-, Control-, Alt- and Alt gr. layers on a standard keyboard)

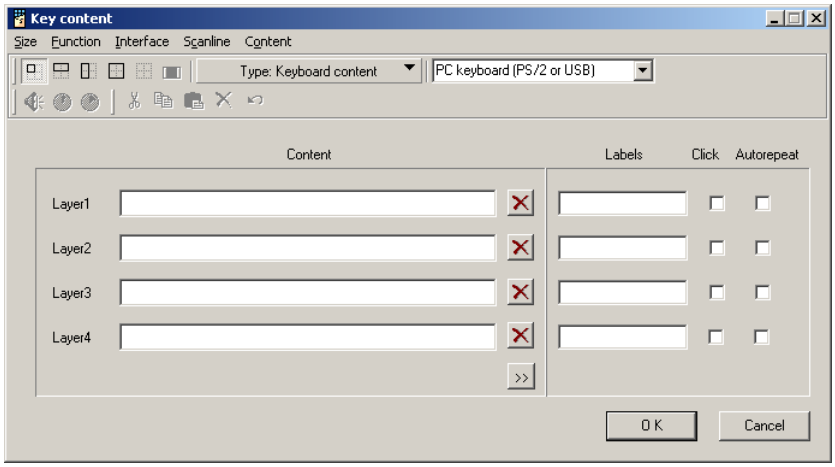
After clicking on the picture of the keyboard, a window opens with the keyboard layout.



Each key can now be programmed.



Clicking the key will open the key definition window



Key content **window has:**

- ***Main menu*** (Size, Function, Interface, Scanline and Content)
- ***Key toolbar*** (Key size, Key type and Interface type)
- ***Content toolbar*** (Special content and Edit content)
- ***Scanline*** to enter content for each layer

The Form has the following sections:

- **Content**

This section contains four scanlines to define content for each of the four layers. You can right click in the scanline to access additional commands and settings in ***context menu*** .

- **Labels**

Each key can have a name for each layer.

- **Click**

Toggle click sound on or off when key is pressed.

- **Autorepeat**

If selected, the key repeats sending its contents while it is being pressed.

When turned off, the contents is sent just once.

- **Clear button**

Press Clear to empty the contents for that layer. (pressing `Delete` doesn't work, it just programs "delete")

- **Expand/compress labels button**

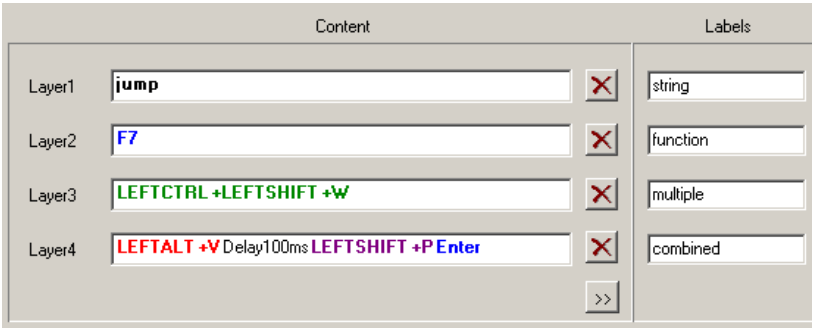
Click it to expand/compress the scanline and hide/show labels.

See also: ***Key content form***

Content Key

You can define up to 4 layers (number of layers can be defined in ***preferences***). Content can be:

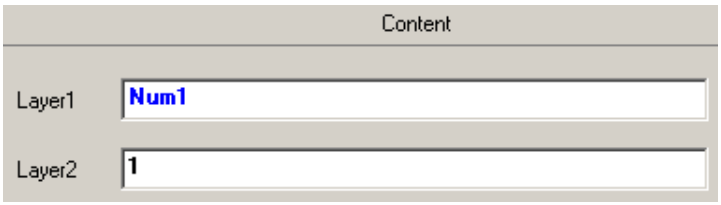
- string (sequence of key presses)
- combination of key presses
- special function (beep, delay)
- combination of the above



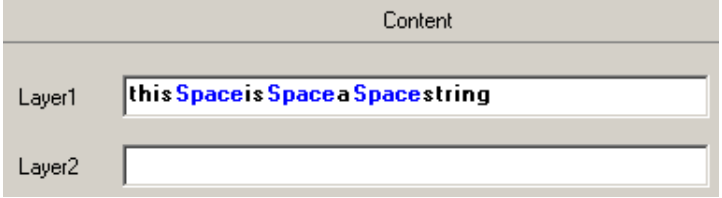
a number

Just enter the number you want as content.

Be careful: numpad keys send different content than the numbers above the qwerty keyboard.



a string



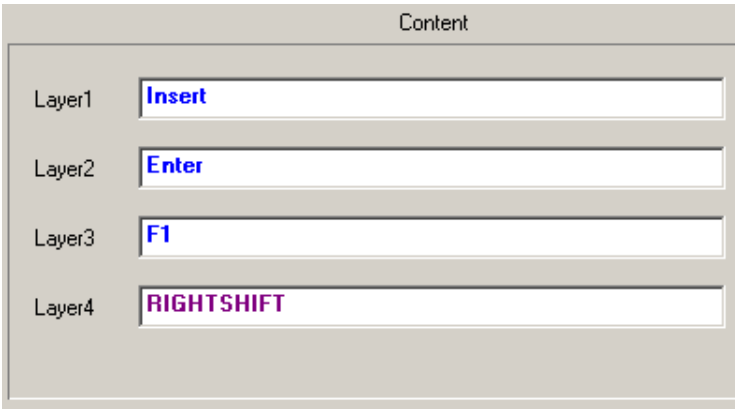
The string you enter is displayed, characters in black, space bars in blue.

a special function key

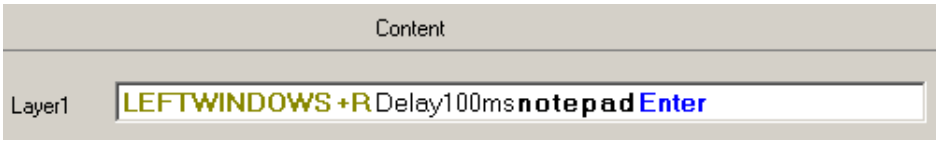
(only when the ***Interface*** is set to PC Keyboard (PS/2 or USB))

Special function contents is displayed in color (blue).

You can press any special key and the contents will be programmed.



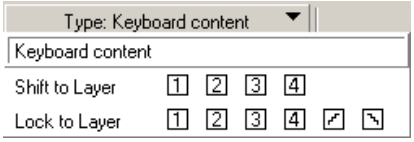
a combination of one or more of the above



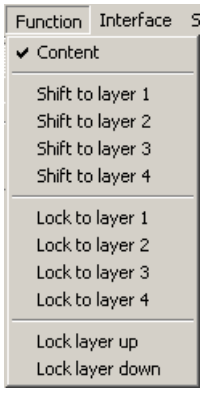
You can combine all of the above, if needed you can insert delays.

Layer Key

It can be selected from **Key Type** dropdown menu in toolbar:



or from **Function** menu:

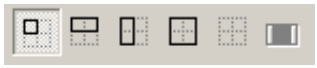


- **Shift to layer** works similarly as `Shift`, `Control` and `Alt` on a standard keyboard; you press them together with another key to temporarily switch to the indicated layer.
- **Lock to layer** works similarly as `CapsLock`
- **Step layer up** or **down** locks to one layer higher or lower.

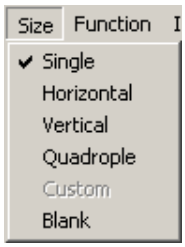
see also ***Function***

Size

Key size can be defined from the toolbar:



or from the **Size** menu:



When double or quadruple keys are placed on the keyboard, they also have to be programmed. The size has to be set in the key in the upper-left corner.

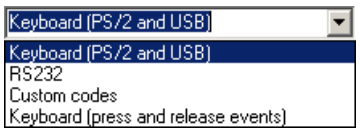
Possible sizes are:

- single 1 x 1 key
- horizontal double 2 x 1 keys
- vertical double 1 x 2 keys
- quadruple 2 x 2 keys

The key(s) that are combined with the current one have to be empty.

Setting to **Blank** disables the key.

Interface



A list of possible interfaces. Check the sections below for an explanation of each interface.

Some modules do not have all listed options.

Keyboard (PS/2 and USB) - default

Contents is entered as normal scan codes and captured by pressing the desired key. Also key combinations can be entered e.g. `A, F11, Ctrl+A`.

When the scan line is active it is coloured in yellow:

and white when inactive:

All codes are captured.

ASCII (PS/2 and USB) (not for Keyboards)

Contents is entered as characters and ASCII codes.

You can enter a character by pressing the corresponding key (A, B,…) or by entering the ASCII code, either decimal or hexadecimal. These codes must be between pipe characters ("|").

RS232

The same as ***ASCII (PS/2 and USB)*** , except that the contents are sent through the RS232 -COM- port.

Contents are entered as characters and ASCII codes.

You can enter a character by pressing the corresponding key (A, B,…) or by entering the ASCII code, either decimal or hexadecimal. These codes must be between pipe characters ("|").

Custom codes

Contents is entered as codes, which should be sent from the keyboard to the system.

NOTE: Use this option only if you are familiar with the system architecture and communication protocols!

Keyboard (press and release events)

It is the same as the ***Keyboard (PS/2 and USB)*** interface except there can be entered 2 events separately. The first one for key press and the other one for key release.

Programming a Chameleon

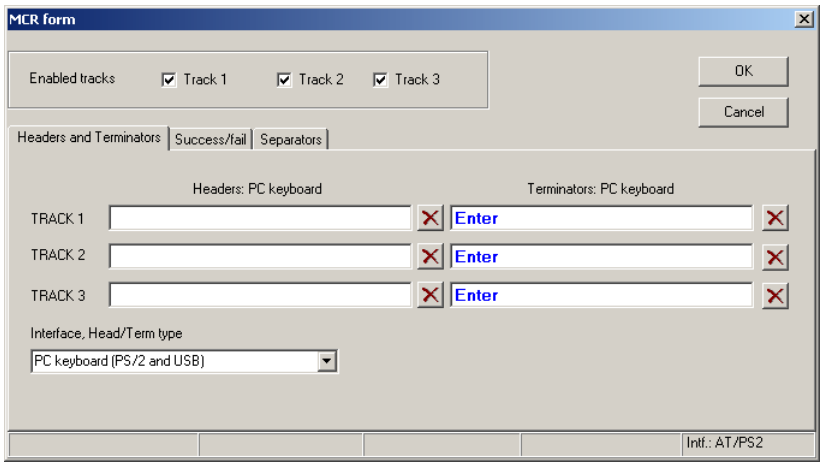
See the help in the Chameleon configuration utility.

Programming a Card Reader

There are two types of card readers, magnetic card readers and barcode readers.

Magnetic Card Reader

After clicking the icon for the card reader the following window appears. Depending on which reader version you have, different tracks can be disabled.



Tracks

All active tracks are shown. De-select if you want to disable a track.

The three dots on the Card reader's icon show how many and which tracks can be read.

e.g. the TM-RAA can read tracks one and two.

Headers and Terminators

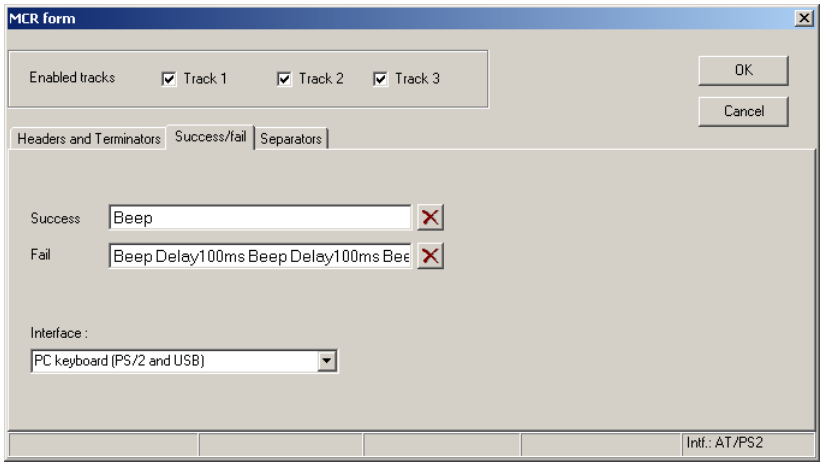
You can assign codes that will be sent before (header) and after (terminator) the content of the track is transmitted to the computer.

sent to the system for each track:		
`header`	`track contents`	`terminator`

The contents of the header and terminator can be the same as for a ***key*** .

Success/fail

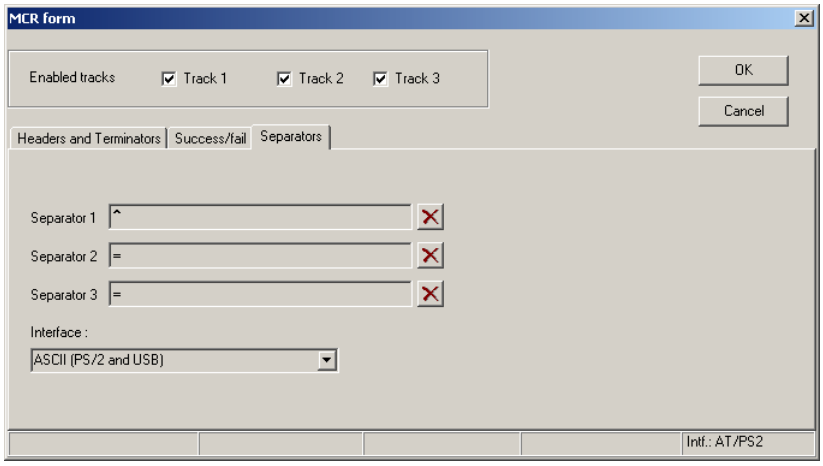
Standard these success and fail codes are programmed, but they can be changed.



Successful reading of the card gives one beep, a failure three.

Separators

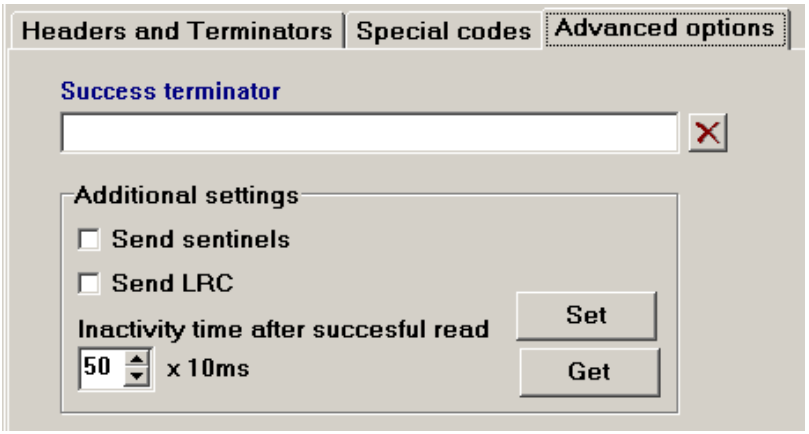
Standard these separators codes are programmed, but they can be changed.



The separator codes in the contents of the card, that are sent to the system, can also be changed. In order to change them you have to enter debug mode. It can be entered by pressing Control+Backspace in main ChangeMe window.

Advanced options

This tab is visible only in debug mode or if the reader is bidirectional. (To enter the debug mode, press `Shift+Alt+Backspace` in ChangeMe main window.)



Here you can enter a SUCCESS TERMINATOR, which is sent after successful read. It is empty by default.

In ADDITIONAL SETTINGS you can set if card sentinels and LRC are sent and for how long the bidirectional reader is inactive after a successful read.

You can read these settings from configuration by pressing **Get**.

You can set them by checking/unchecking the checkboxes, entering the inactivity time and pressing **Set**.

Note: These options are only possible with bidirectional readers.

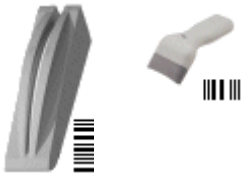
Interface, Head/Term type

Select the interface for the header, terminator and contents from the dropdown box.

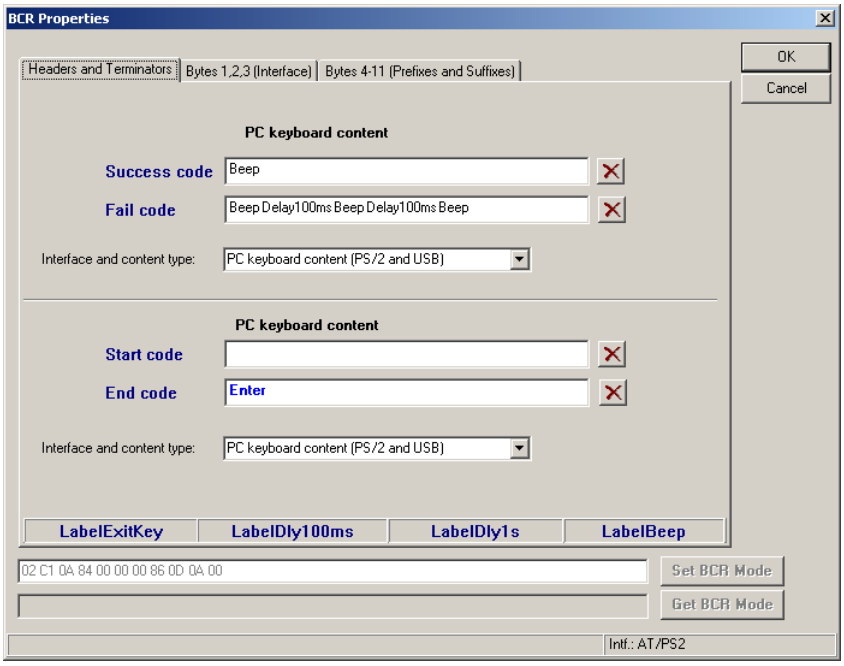
See ***interfaces*** (see "Interface" on page 100) for more information on each interface.

Barcode slot reader

This configuration applies to the barcode slot reader as well as the RS232 pass-trough port (e.g. barcode scanner input).



After clicking on the icon for the card reader the following window appears.



Start/End code

You can assign codes that will be sent before (**Start code**) and after (**End code**) the content of the track is transmitted to the computer.

successful read :	`success code`	`start code`	`bar code data`	`end code`
unsuccessful read :	`fail code`			

Success/Fail code: The codes that will be sent when the card couldn't be read or was read successfully can be changed.

To add beep, short and long delay right-click into scanline and select SPECIAL CONTENT > BEEP, DELAY 100MS or DELAY 1S

Interface

The interface for success/fail and start/end can be independently set.

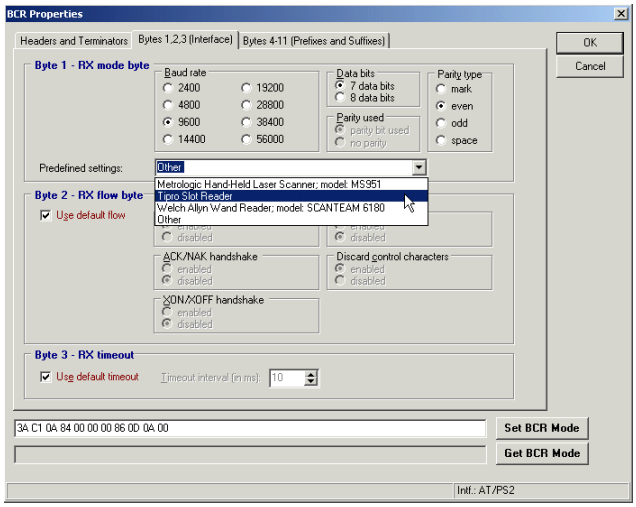
More on interfaces, ***click*** (see "Interface" on page 100)

Properties

Tab 2- Bytes 1, 2, 3 (Interface) & **Tab 3**- Bytes 4-11 (Prefixes and suffixes)

Here the parameters of the connected Bar Code Reader can be defined.

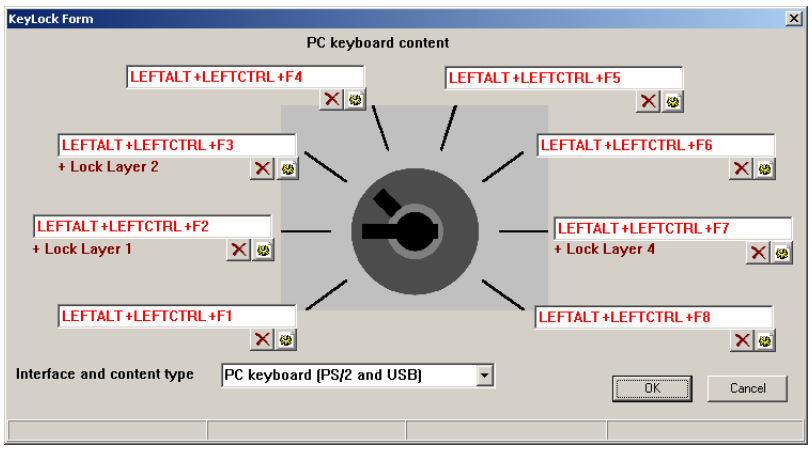
A few types have already been programmed.



Programming an ID module

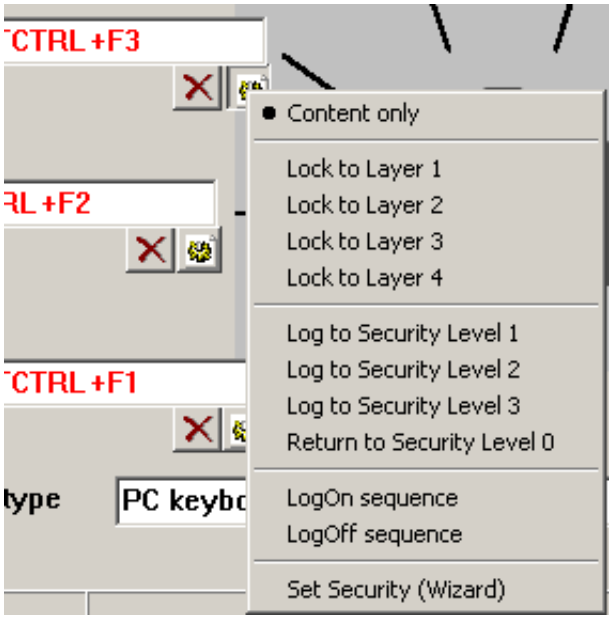
There are several types of ID modules. All have 2 programmable keys. These keys can be programmed like normal keys on a keyboard (see ***Programming a keyboard***)

Keylock



For every key position content *and* a lock to layer can be defined.

Press to choose a layer to lock to.



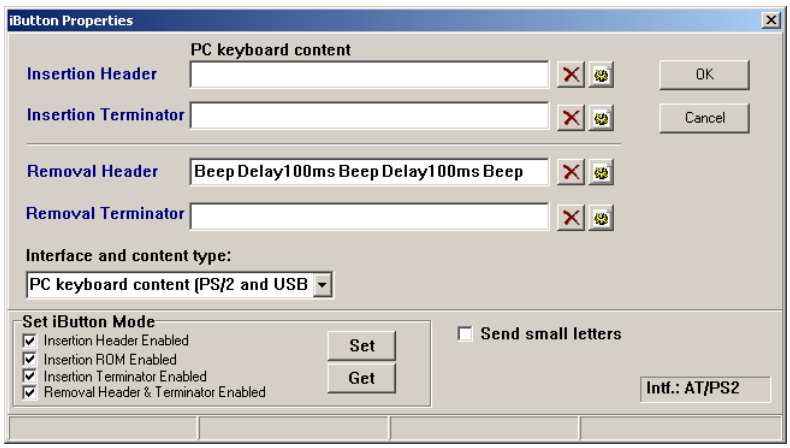
To clear the contents press ; to remove the lock to layer, press and set to CONTENT ONLY.

If your configuration has an USB controller, you can also define security. See ***Security features*** for details.

Interface depends on the connection to the computer; PS2, USB or RS232. See also ***interface*** .

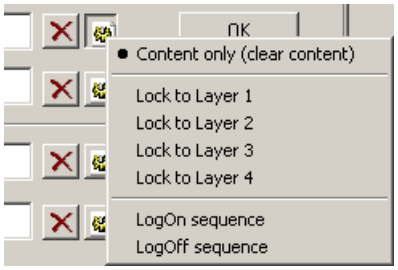
To add beep or delay right-click the scanline. ***Context menu*** opens.

iButton



To define Beep or Delay right-click in scanline. Content menu opens. See ***Beep and Delay*** for details.

By clicking you can define special content:



When iButton is inserted/removed, the keyboard can be locked to a certain Layer.

If you have an USB controller, security can be also defined. See ***Security features*** for details.

Contents

The content of the iButton is sent after the insertion header and is followed by the insertion terminator.

	iButton inserted				**iButton removed**	
sent to the system:	insertion header	ID number	insertion terminator		removal header	removal terminator

When the iButton is removed, just the removal header and terminator are sent. To send a code to the system *and* lock a layer, define the header to send the code and the terminator to lock to layer.

Interface

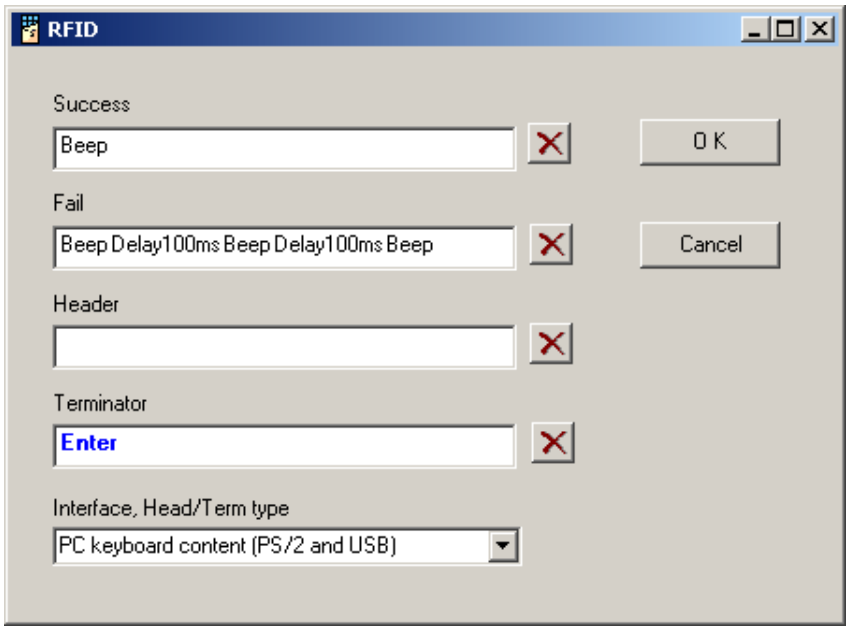
Select the interface for the header, terminator and contents.

see also ***interfaces*** (see "Interface" on page 100) for more information about the available interfaces.

Set iButton Mode

Only in special occasions these settings need to be changed. For instance when some data (e.g. Removal Header) should not be sent.

RFID (Radio Frequency Identification)



RFID form has the following settings:

- SUCCESS is sent when an RFID tag is successfully read. Beep by default.
- FAIL is sent when it fails to read an RFID tag. Triple beep by default.
- HEADER is sent before the RFID number.
- TERMINATOR is sent after the RFID number.
- INTERFACE defines the RFID module interface. RFID header, number and terminator are sent through it. See also ***Interface type***

The content of the RFID tag is sent after the header and is followed by the terminator.

	RFID tag successfully read		
sent to the system:	`header`	`ID number`	`terminator`

Programming a Handset

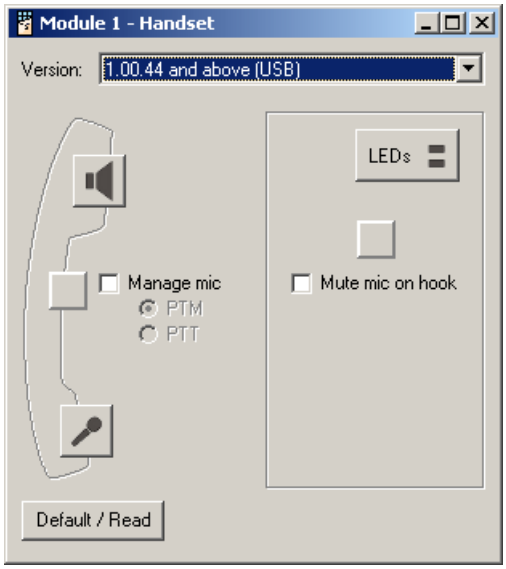
Handset versions

Handset	Handset Type	Supports Mute Microphone	Has Dialpad	Supports HID Telephony
TM-HANDSET	HHA and HUA (version 92.F2.00 and below)	No	No	No
	HUA (vesrion 92.F2.01 and above)	Yes	No	No

TM-HANDSET (HUM) 	HUM	Yes	No	No
TM-HANDSET with Dialpad 	HUM with dialpad	Yes	Yes	No
TM-HANDSET with Telephony 	HTM and HTA	Yes	No	Yes
TM-HANDSET with Dialpad and Telephony 	HTM with dialpad and HTA with dialpad	Yes	Yes	Yes
TM HANDSET HUA-5B 	HUA-5B	No	No	No
TM-HANDSET analogue 	HAA It can be connected to a BeFREE module.	Yes	No	Yes
TM-HANDSET analogue with DIalpad 	HAA with dialpad It can be connected to a BeFREE module.	Yes	Yes	Yes

USB Handsets with firmware version 01.00.xx, where xx is 3C and above support additional settings for microphone and speaker.

Handset form



Handset

The **Handset button** can be defined to work like:

- Push To Mute - when the button is pressed the microphone is muted
- Push To Talk - the button have to be pressed in order to activate the microphone

Content for PTT key can be defined by clicking on the button.

Note: Speaker and Microphone settings are supported by handsets with firmware version 01.00.xx, where xx is 3C or above.

Base

The **Hook switch** can have a function to mute the microphone when hung up.

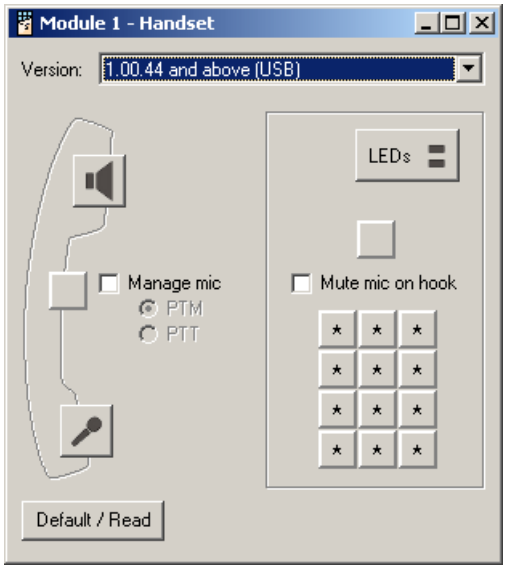
Content for Hook switch can be defined by clicking on the button.

Default / Read

The **Set default** option sets all settings (Speaker, Microphone, Manage mic, LEDs and Mute mic on hook) to defaults except Handset key and Hook switch contents.

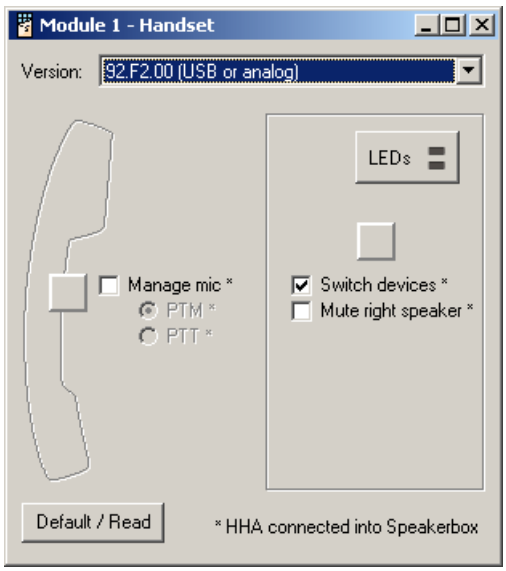
The **Read settings from module** option reads the settings from the connected Handset module.

Dialpad (optional)



A handset can have dialpad keys. Their content can be defied by clicking on the on-screen keys.

Analog handset (HHA) in configuration with Speakerbox



Analog (HHA) handset that is connected into the speakerbox have to following settings:

Handset button

Check the MANAGE MIC checkbox to enable the handset button. It can have the following functionality:

- PUSH TO MUTE
  - Microphone is muted when the PTT button is pressed.
  - Microphone is activated when the PTT button is released.
- PUSH TO TALK
  - Microphone is activated when the PTT button is pressed.
  - Microphone is muted when the PTT button is released.

Hook switch

Check the SWITCH DEVICES checkbox to enable switching between speakerbox and handset:

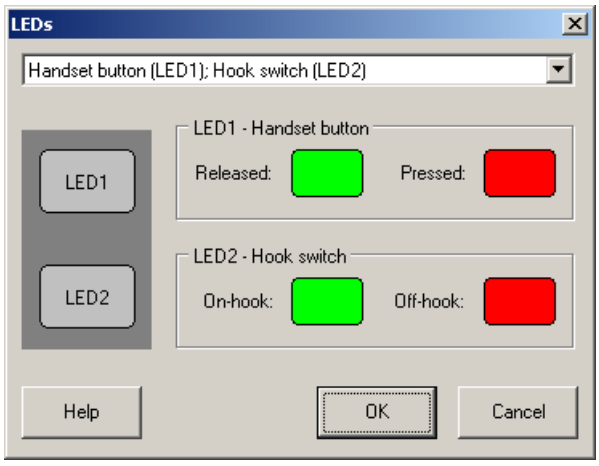
- Handset is activated when the handset is lift up from the handset base.
- Speakerbox is activated when the handset is put on the handset base.

Check the MUTE RIGHT SPEAKER to enable muting right speaker (alert tone) on speakerbox:

- Alert tone is muted when the handset is lift up from the handset base.
- Alert tone is activated when the handset is put on the handset base.

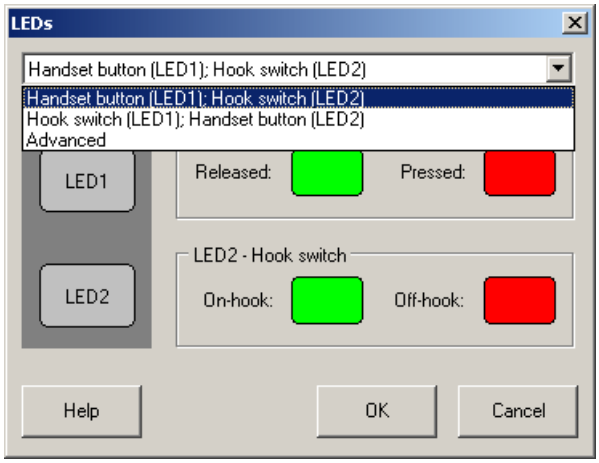
Otherwise alert tone is always on on the speakerbox right speaker.

Leds

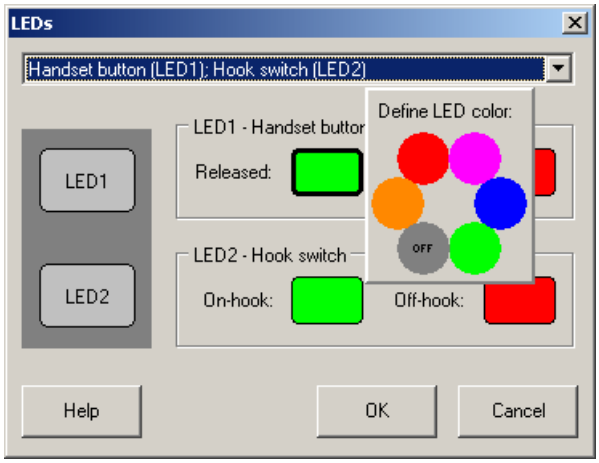


There are 2 RGB LEDs on the handset base. They can change theirs color on handset button and hook switch event.

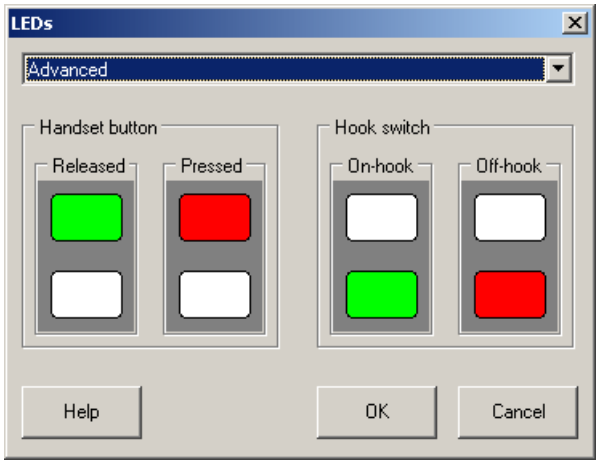
It can be defined that the upper LED shows handset button state (released/pressed) and the other hook switch state (on-hook/off-hook) or the other way around:



Color of the LED can be defined by clicking on it and selecting color from the palette:

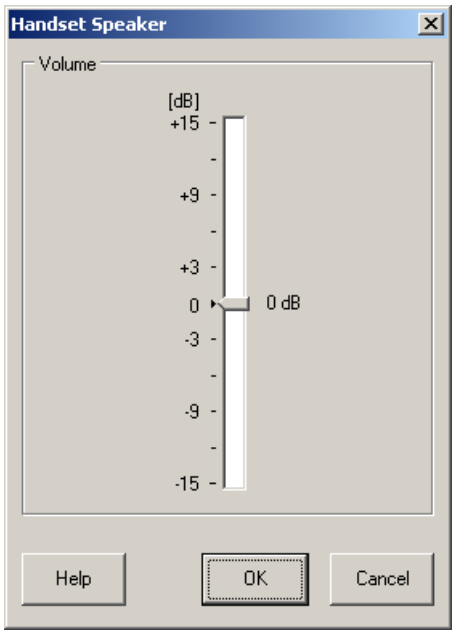


In the advanced mode both LEDs can be operated on each event:



Speaker

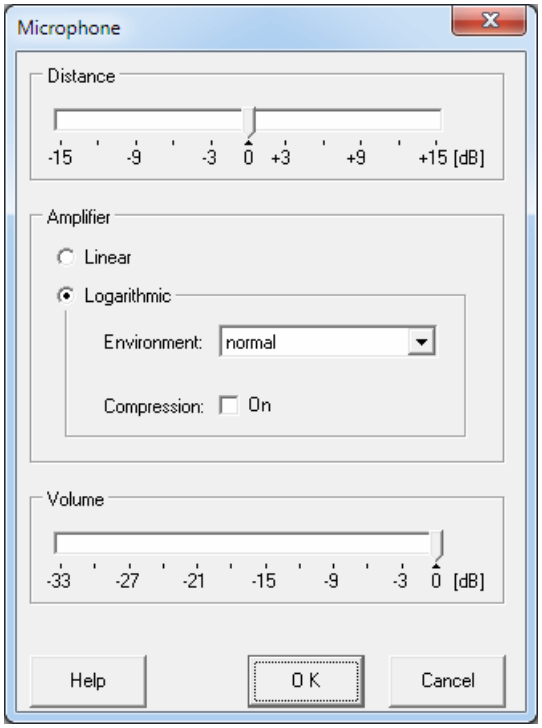
Speaker volume can be adjusted:



Note: Speaker settings are supported by handsets with firmware version 01.00.xx, where xx is 3C or above.

Microphone (version 2)

Note: This microphone settings are supported by handsets with firmware version 01.00.xx, where xx is 44 and above.



Distance is software adjustable microphone preamplifier. It can be adjusted using the track bar.

Programmable gain **Amplifier** can be set to one of the following:

- Optional LINEAR regime is available for those who prefer naturalness over clarity.
- Default LOGARITHMIC mode enables highest voice dynamics and best signal clarity.

Environment indicates the environment where the Speakerbox is used. It can be set to:

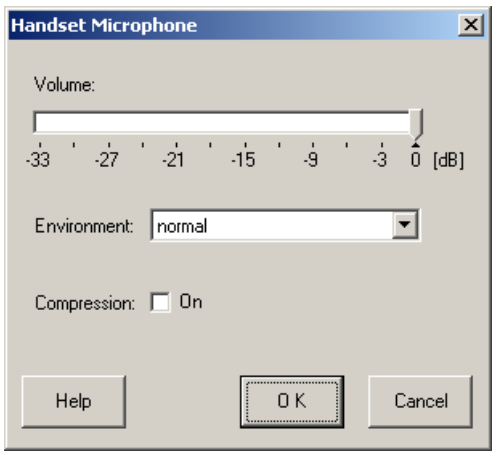
- QUIET
- NORMAL
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

Microphone **Volume** can be set using the track bar.

Microphone (version 1)

Note: This microphone settings are supported by handsets with firmware version from 01.00.3C to 01.00.43



Microphone **Volume** can be set using the track bar.

Environment indicates the environment where the Speakerbox is used. It can be set to:

- QUIET
- NORMAL
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

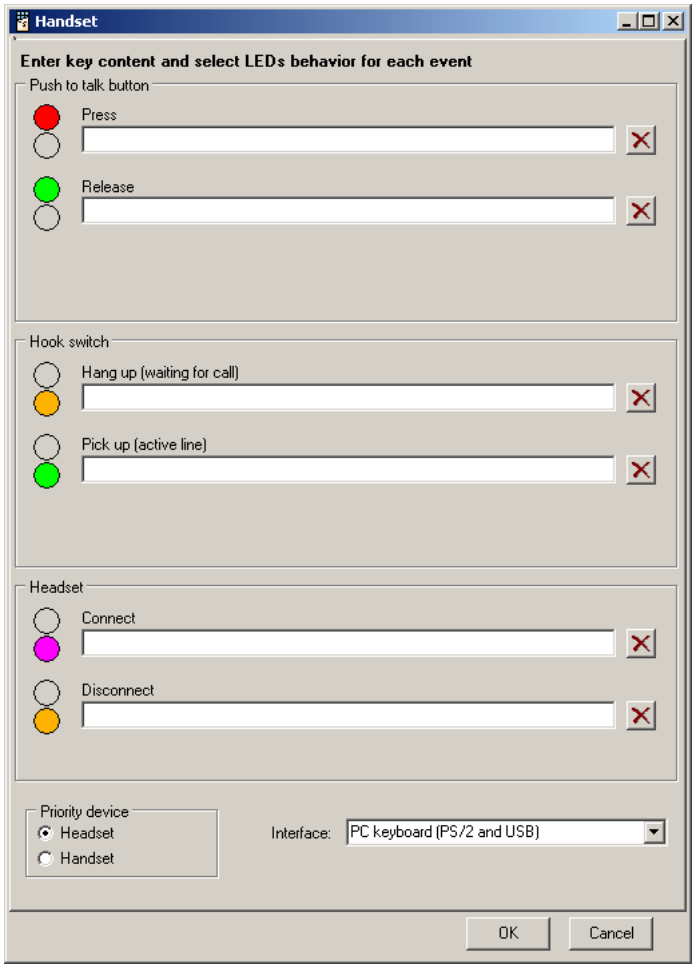
Handset HUA-5A

Handset HUA-5A form defines the following key sequences:

- Handset key:
  - PRESS is sent when the key on the handset is pressed.
  - RELEASE is sent when the key on the handset is released.
- Hook switch:
  - HANG UP (WAITING FOR CALL) is sent when the handset is put on the handset base.
  - PICK UP (ACTIVE LINE) is sent when the handset is lift up from the handset base.
- Headset input:
  - CONNECT sequence is sent when the headset is connected to the handset.
  - DISCONNECT sequence is sent when the headset is disconnected from the handset.

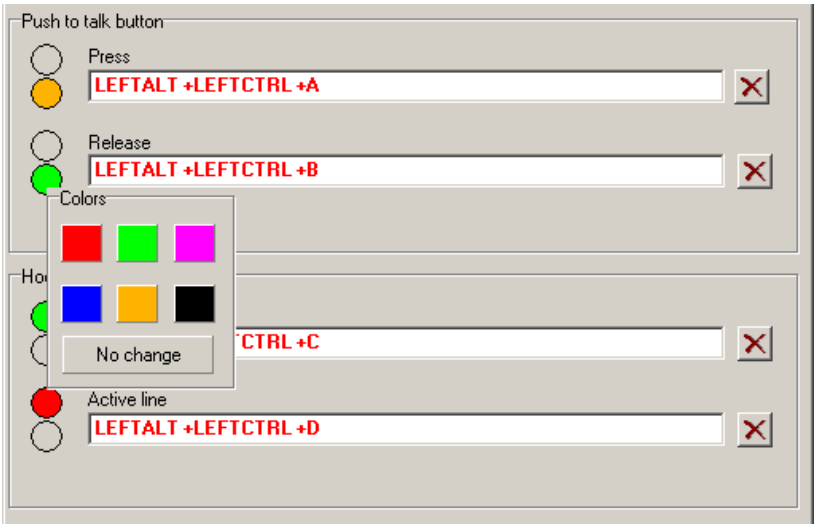
Priority device defines which device is active when handset is picked up and headset is connected. Only one of them can be active:

- HANDSET or
- HEADSET.



LEDs

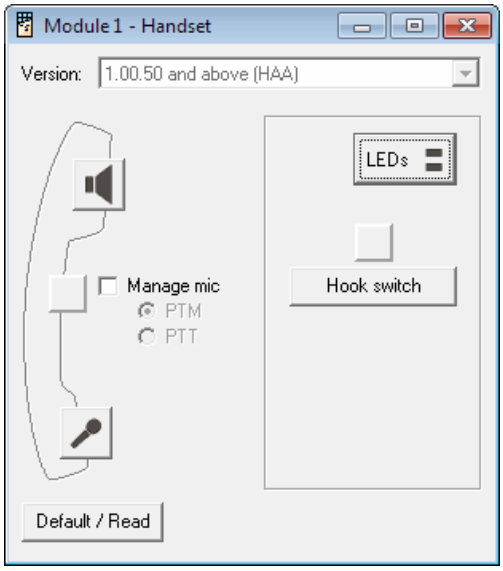
Handset module has two LEDs. Their color can be changed on the above events. You can set their color by moving the mouse over a circle and choosing a color. Black color means the LED is off. NO CHANGE means nothing happens - the color from previous event stays.



Programming an Analogue handset (HAA)

Handset form

HAA handset is a analogue handset that can be connected to a BeFREE touchcomputer and can switch between Handset and Handsfree audio on handset pick up / hang up.



Handset

The **Handset button** can be defined to work like:

- Push To Mute - when the button is pressed the microphone is muted
- Push To Talk - the button have to be pressed in order to activate the microphone

Content for PTT key can be defined by clicking on the button.

Base

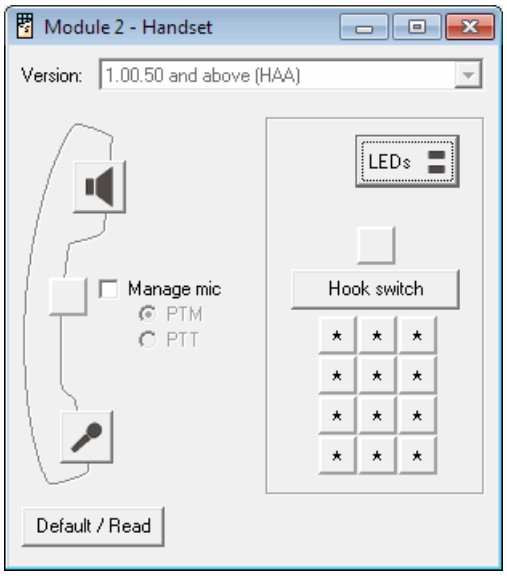
Content for Hook switch can be defined by clicking on the button.

Default / Read

The **Set default** option sets all settings (Speaker, Microphone, Manage mic, LEDs and Hook switch) to defaults except Handset key and Hook switch contents.

The **Read settings from module** option reads the settings from the connected Handset module.

Dialpad (optional)



A handset can have dialpad keys. Their content can be defied by clicking on the on-screen keys.

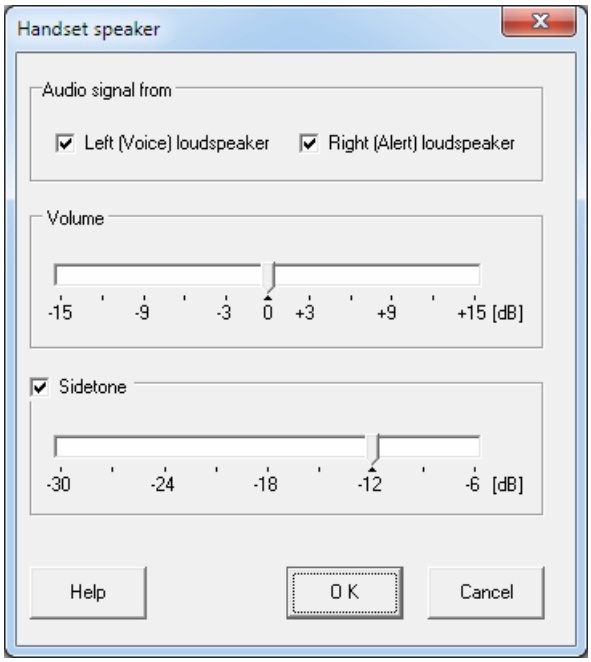
Speaker

Here you can define what **audio signal from BeFREE** is played at the handset speaker. It can be signal from:

- LEFT (VOICE) LOUDSPEAKER,
- RIGHT (ALERT) LOUDSPEAKER or
- signal from both loudspeakers.

Volume of handset speaker can be adjusted.

Level of **Sidetone** can be adjusted. It can be disabled by removing the **Sidetone** tick.



Microphone

Distance is software adjustable microphone preamplifier. It can be adjusted using the track bar.

Programmable gain **Amplifier** can be set to one of the following:

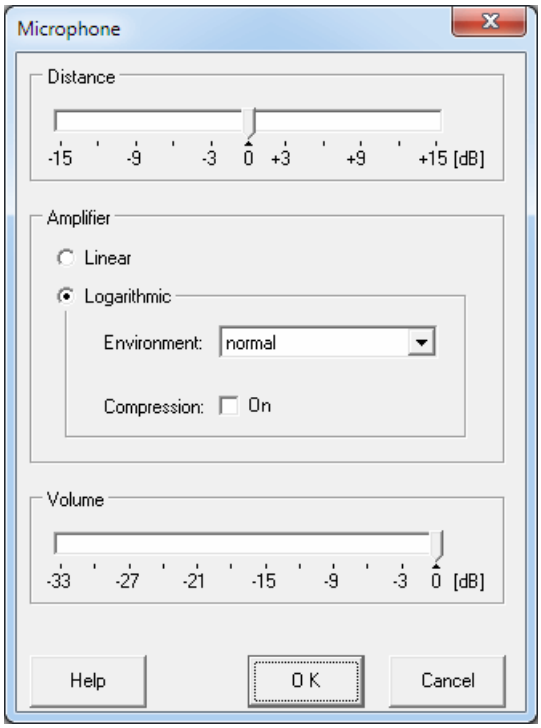
- Optional LINEAR regime is available for those who prefer naturalness over clarity.
- Default LOGARITHMIC mode enables highest voice dynamics and best signal clarity.

Environment indicates the environment where the Speakerbox is used. It can be set to:

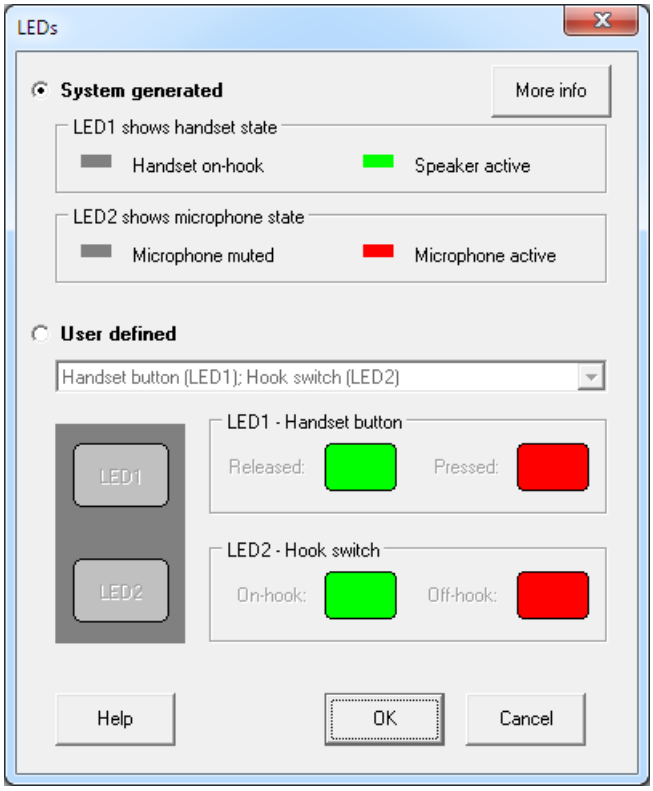
- QUIET
- NORMAL
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

Microphone **Volume** can be set using the track bar.

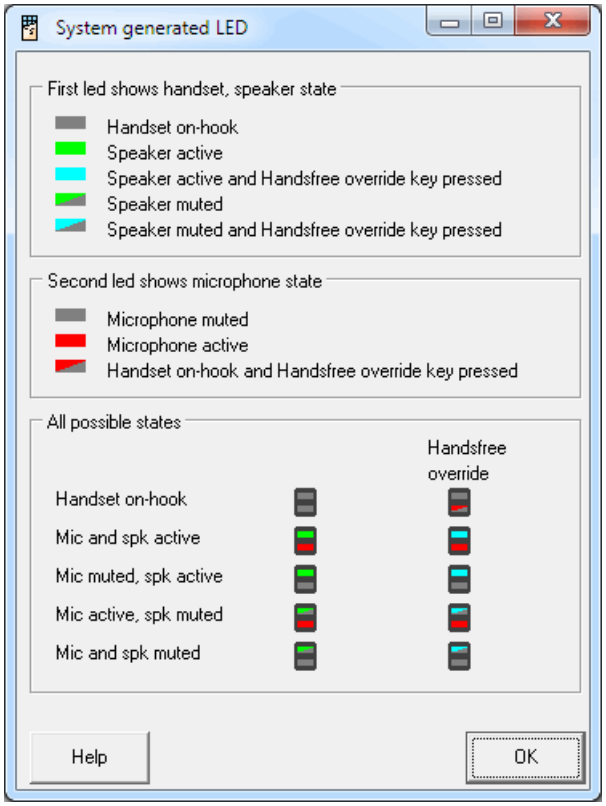


Leds


LEDs
System generated
More info
LED1 shows handset state
Handset on-hook
Speaker active
LED2 shows microphone state
Microphone muted
Microphone active
User defined
Handset button (LED1); Hook switch (LED2)
LED1
LED2
LED1 - Handset button
Released:
Pressed:
LED2 - Hook switch
On-hook:
Off-hook:
Help
OK
Cancel

LED lights are set to show SYSTEM GENERATED behaviour by default. In this mode the LED lights signal all possible states. Some of them are:

- when handset is on hook, both lights are off
- when speaker is active first light is green
- when microphone is active, the second light is red

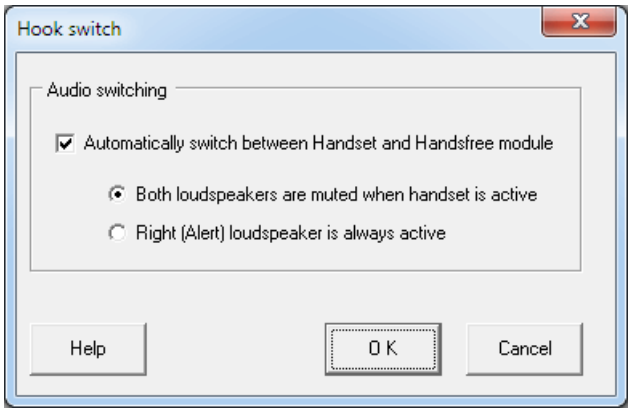


The User defined mode is explained in the ***Leds*** section.

Hook switch

The Hook switch automatically switches between handsfree module (BeFREE) and handset. This can be disabled by removing the AUTOMATICALLY SWITCH BETWEEN HANDSET AND HANDSFREE MODULE tick.

By default BOTH LOUDSPEAKERS OF THE BEFREE ARE MUTED when the handset is picked up. If the RIGHT SPEAKER of BeFREE is used for alert sounds then it is more suitable that it is ALWAYS ACTIVE, so that the alert sounds are heard also when the handset is off-hook.

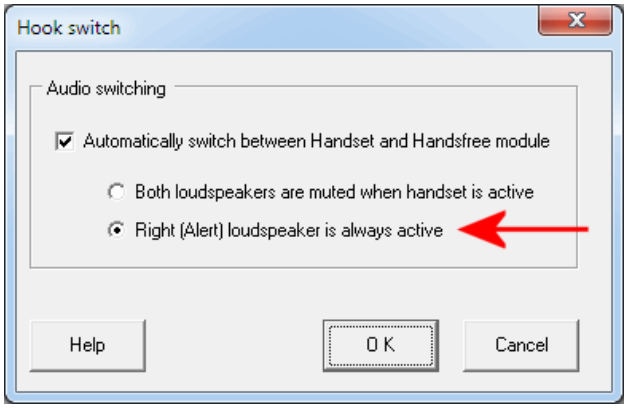


Voice and alert sounds

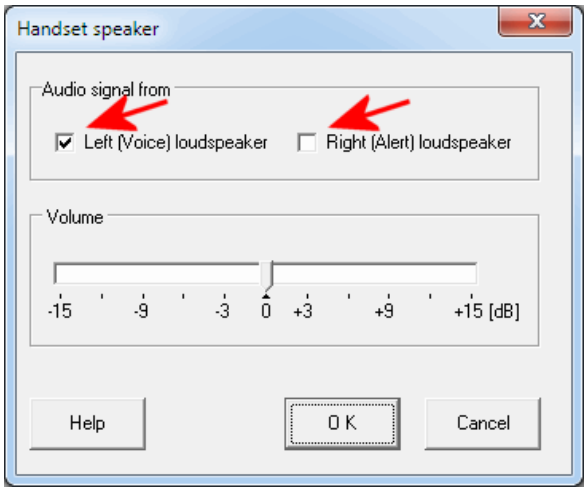
BeFREE has stereo speakers - left and right speaker. Left channel can be used to playback voice sounds and the right channel to playback the alert sounds.

When the left channel is used for voice sounds and the right channel for alert sounds, it is suggested to use the following settings:

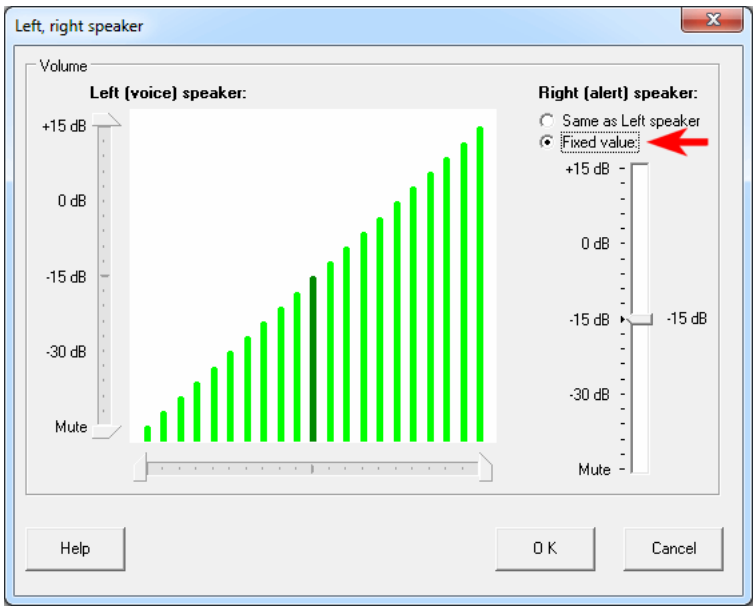
- **Hook switch**: THE RIGHT (ALERT) SPEAKER SHOULD BE ALWAYS ACTIVE - also when the handset is off-hook.



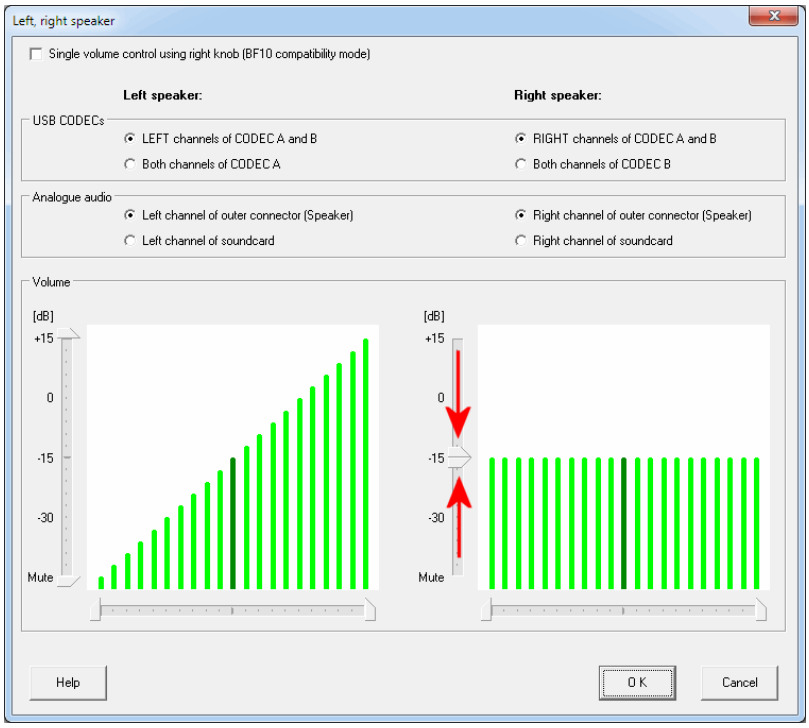
- **Handset speaker:** Select the LEFT (VOICE) LOUDSPEKAER to be playbacked at the handset speaker.



- When handset is connected to **BeFREE 10** module: **Left, right speaker:** Set volume of the RIGHT (ALERT) SPEAKER to the FIXED VALUE, so it cannot be changed (muted) using the knob.



- When handset is connected to **BeFREE 20** or **BeFREE22** module: **Left, right speaker:** Set volume of the RIGHT SPEAKER to the FIXED VALUE, by moving the vertical sliders. This way the right (alert) speaker cannot be changed (muted) using the knob.



Programming a Speakerbox

Speakerbox

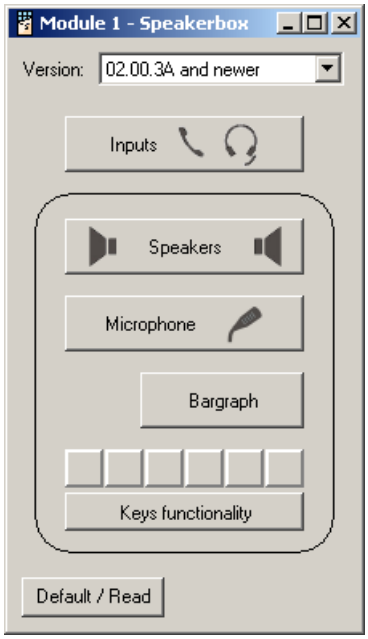
Speakerbox without gooseneck microphone

Speakerbox with HID Telephony interface

Speakerbox with HID Telephony interface and without gooseneck microphone

The Speakerbox is an audio device for a hands-free bidirectional voice communication. Besides the primary function (i.e. hands free voice communication) it also provides connection for an external analogue headset and handset, as well as the digital control over all the three (HandsFree, Headset and Handset) audio devices that share the same audio channel. The hands-free audio device comprises built-in Voice Speaker (i.e. left-hand side loudspeakers) and goose-neck microphone, along with an incremental encoder for volume control, bar-graph multicolour LED indicator and two function keys (MIC key and HF key). Two more keys are provided for immediate loudspeaker volume control of the external headset and handset. Since the output audio channel is stereo, there is also the right audio output which is dedicated to alarm/alert messages from the host system at the Alert Speaker (i.e. right-hand side loudspeakers).

Speakerbox form



The Speakerbox is composed from the following devices:

- 2 **input** connectors where external Handset, Headset and PushToTalk switch/pedal can be connected
- Stereo **speakers**
- Gooseneck **microphone**
- **Bargraph** that can show VU meter, speakers volume and input devices volume
- **6 keys** that can have defined content and **special functions**

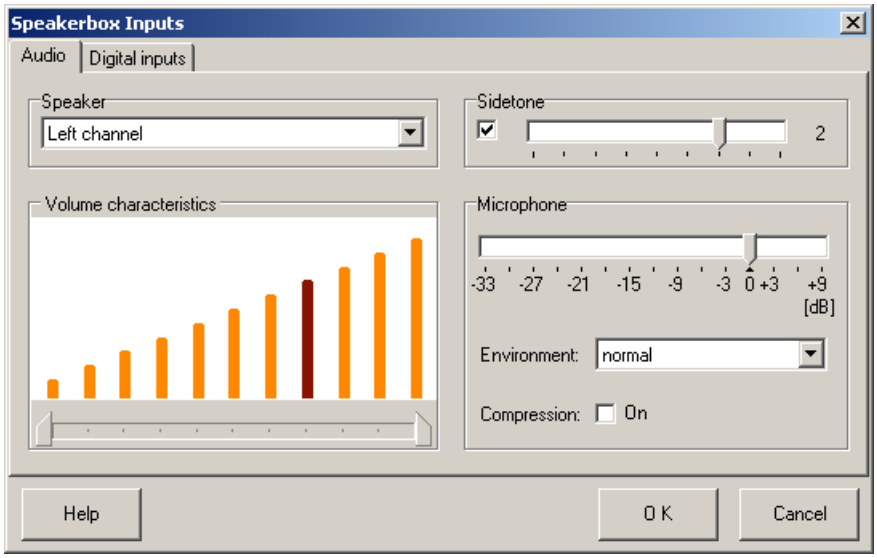
The **Default/Read** button:

- The **Set default** option sets all settings (Inputs, Speakers, Microphone, Bargraph and Keys functionality) to default values except digital input and key contents.
- The **Read settings from module** option reads the settings from the connected Speakerbox module.

Inputs

A speakerbox has two connectors (inputs) at rear side. External handset and headset can be connected there. The connections can be alternatively used as digital inputs for an external PushToTalk switch/pedal.

Audio



A handset/headset mono **speaker** can play:

- BOTH (LEFT+RIGHT) CHANNELS,
- LEFT CHANNEL,
- RIGHT CHANNEL or
- NONE of them.

Volume characteristics can be defined using the following parameters:

- **minimum** - the lowest value - it can be set by moving a slider
- **maximum** - the highest value - it can be set by moving a slider
- **default** - initial value - it can be set by clicking in the characteristics

Initial value of **sidetone** attenuation for handset/headset can be set. The sidetone can be disabled by not selecting the **Enabled checkbox**.

Microphone settings depend on version of Speakerbox hardware:

- 02.00.xx (more recent)
- 05.00.xx (older) - Microphone settings are disabled, because it should be set in the Microphone form.

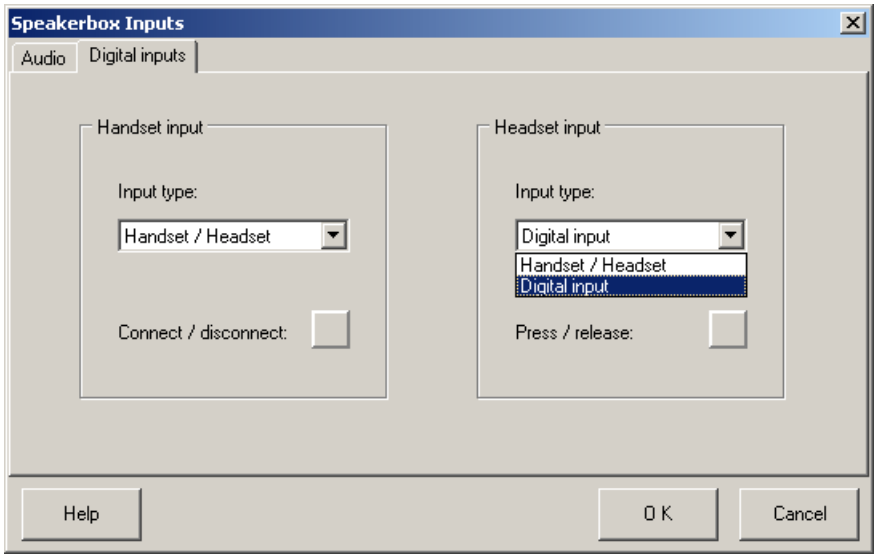
Microphone **Volume** can be set using the track bar. If it is put more to right, its gain is higher. If it is put more to left it is lower.

Environment indicates the environment where the Speakerbox is used. It can be set to:

- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression (Auto) can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

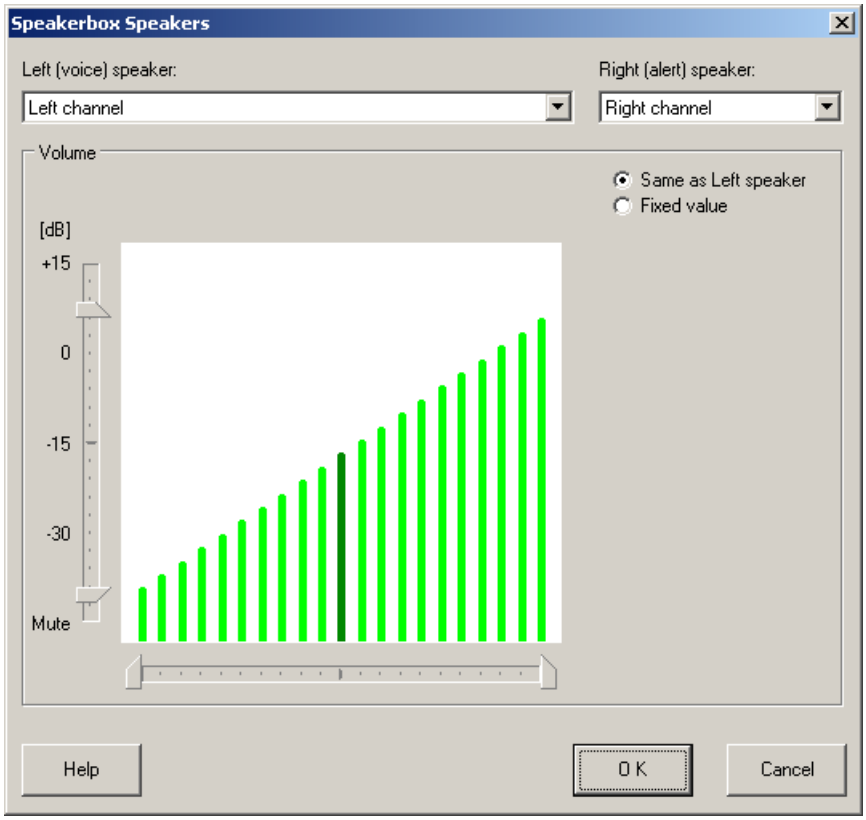
Digital inputs



Here can be defined for each input connection:

- Input type:
  - Handset/Headset
  - Digital input (external PushToTalk switch/pedal)
- Content for Connect/disconnect event in case of Handset/Headset or Press/release event in case of Digital input.

Speakers


Speakerbox Speakers
Left (voice) speaker:
Left channel
Right (alert) speaker:
Right channel
Volume
Same as Left speaker
Fixed value
[dB]
+15
0
-15
-30
Mute
Help
OK
Cancel

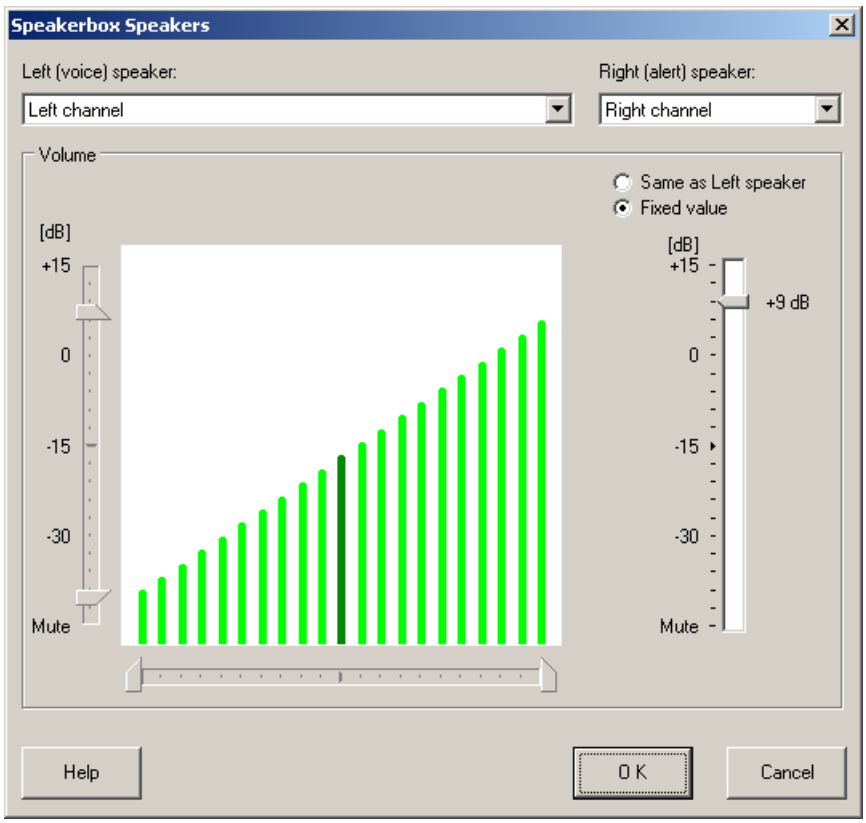
Stereo speakers has **left** and **right speaker**. Each of them can be attached to LEFT or RIGHT CHANNEL.

Volume control

Volume characteristics for potentiometer can be customized by using the graph:

- Maximum and minimum values can be adjusted by moving sliders in the vertical bar (dB).
- Bargraph steps can be adjusted by moving sliders in the horizontal bar.
- Initial value of volume can be set by clicking in the graph.

Dual volume control

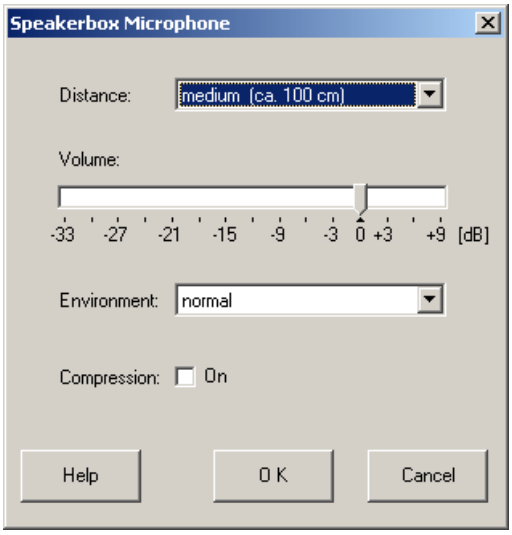


Speakerbox with firmware version 02.00.xx, where xx is 3A or above, supports dual volume control. Each speaker can have its own volume control. The right speaker, that can be used for alert, can be controlled in the same way as left speaker or it can be set to a fixed value that does not change when the potentiometer is moved.

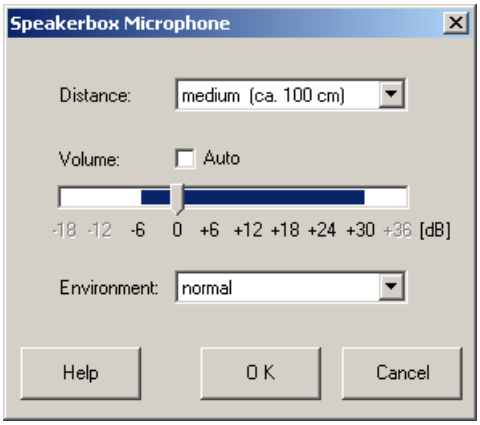
Microphone

The appearance of the Microphone form depends on the version of Speakerbox module:

- 02.00.3A AND NEWER



- 02.00.39 AND EARLIER



- 05.00.XX (older) - Distance parameter is not supported

Distance defines a distance of a person from the microphone. It can be:

- VERY SHORT (~10 CM)
- SHORT (~30 CM)
- MEDIUM (~100 CM)
- LONG (~200 CM)

Note: If the microphone is to be used also at considerably shorter distances and/or voice dynamics is wide (up to very loud), it is advised to set the Volume to 0 dB in order to prevent possible signal clipping/distortion in all cases.

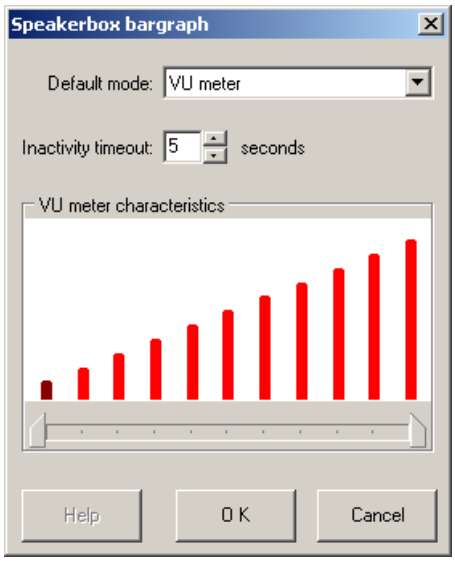
Microphone **Volume** can be set using the track bar. If it is put more to the right, its gain is higher. If it is put more to left it is lower. In Speakerbox module version 05.00.xx and version 02.00.29 and earlier the scale is adapted according to the **Distance** setting.

Environment indicates the environment where the Speakerbox is used. It can be set to:

- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression (Auto) can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

Bargraph



Default mode defines what is shown on bargraph by default. It can show:

- state of VU METER
- SPEAKERBOX VOLUME
- HANDSET AND HEADSET VOLUME

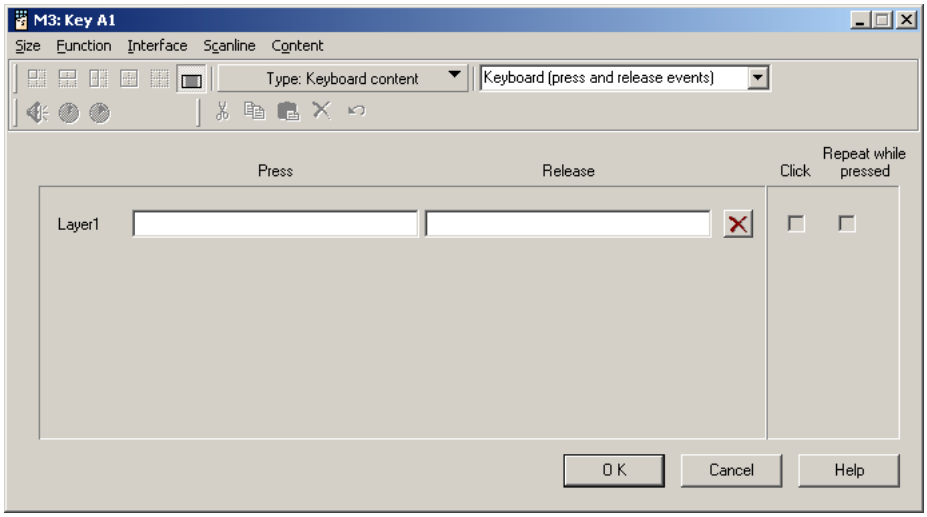
After the **inactivity timeout** the bargraph returns to the default mode. It can be set in rage of 1 TO 10 seconds.

VU meter characteristics

The following parameters can be set for **VU meter characteristics**:

- **minimum** - the lowest value - it can be set by moving a slider
- **maximum** - the highest value - it can be set by moving a slider

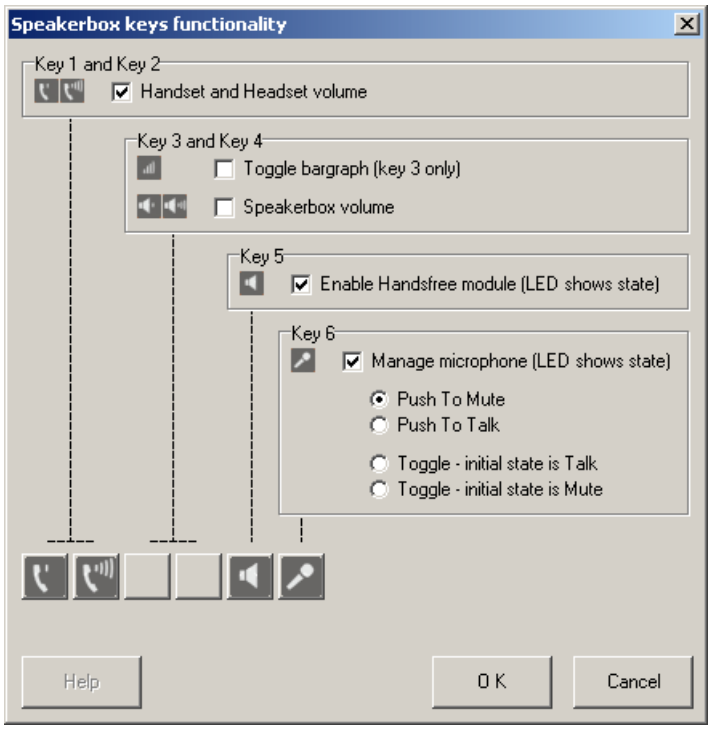
Keys



Define Content for 6 keys on Speakerbox module.

Press and release events can be defined separately by setting **interface type** to KEYBOARD (PRESS AND RELEASE EVENTS).

Keys functionality



Speakerbox keys can have defined special functions:

- **Key 1 and Key 2** - decrease and increase Inputs (Handset and Headset) volume
- **Key 3** - toggle between bargraph modes (VU meter, Speakerbox volume and Inputs volume)
- **Key 3 and Key 4** - manage Speakerbox volume down/up (supported in Speakerbox version 05.00.xx and version 02.00.39 and earlier)
- **Key 5** - enable Handsfree module when pressed (LED shows when Speakerbox speakers are active - the current active device is overridden)
- **Key 6** - manage microphone (LED shows when microphone is active)

Programming a BeFREE 15 module

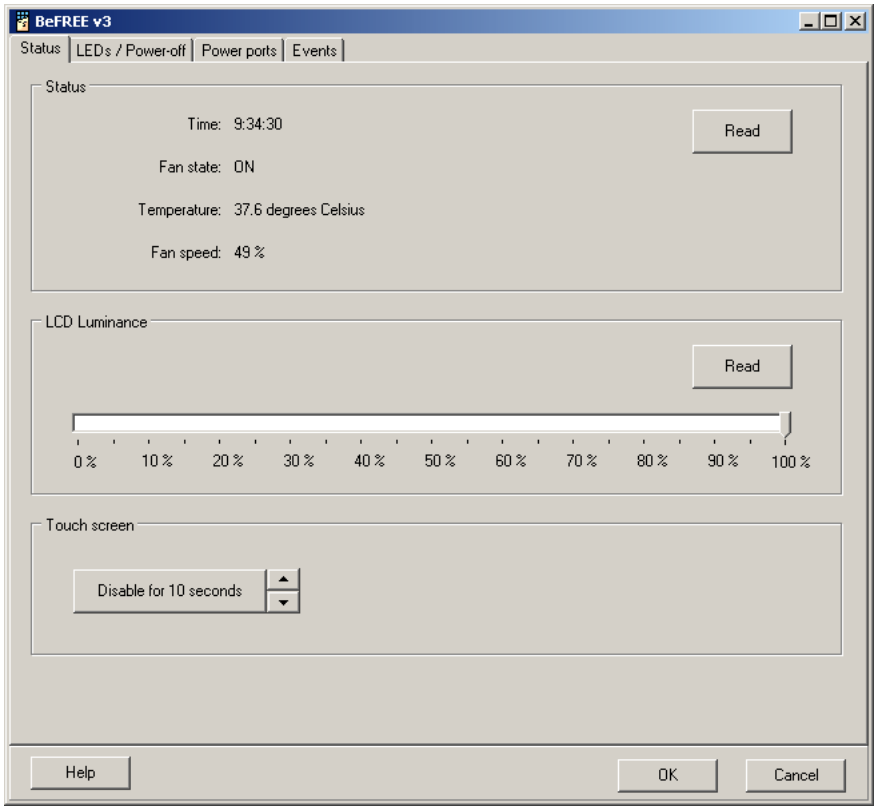
BeFREE is an integration of PC and a LCD touch screen, based on the existing FREE+ line. Therefore BeFREE is compatible with all existing and future FREE/FREE+ line modules. The BeFREE offers full connectivity in a very compact form and allows for easy-access serviceability. A special low heat producing processor is used, which is powerful enough for most tasks (except gaming and server applications). Due to low heat components and special design BeFREE produces very low noise levels. BeFREE is built in the housing of the original 15" FREE+. It consist of an industrial grade motherboard, hard disk, DC/DC converter, touch screen, high brightness TFT and Tipro controller.

BeFREE v3 (Atom based)

Standard version of BeFREE:

Powered version of BeFREE:

Status


BeFREE v3
Status
LEDs / Power-off
Power ports
Events
Status
Time: 9:34:30
Read
Fan state: ON
Temperature: 37.6 degrees Celsius
Fan speed: 49 %
LCD Luminance
Read
0 %
10 %
20 %
30 %
40 %
50 %
60 %
70 %
80 %
90 %
100 %
Touch screen
Disable for 10 seconds
Help
OK
Cancel

Status

STATUS shows information about:

- FAN STATE (OFF, ON, MAX)
- TEMPERATURE inside the BeFREE and
- FAN SPEED.

Press the **Read** button to update information.

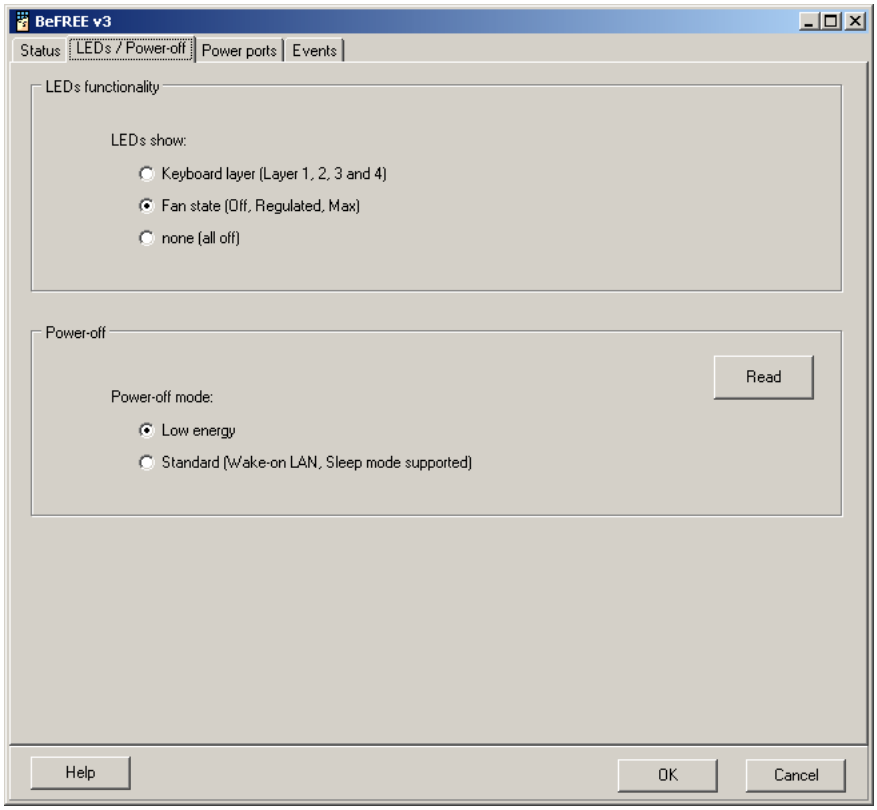
LCD luminance

LCD LUMINANCE can be set here. The luminance is set immediately when the bar is moved.

Touch screen

Press the **Disable** button to disable the touch screen for 10 to 60 seconds. This functionality is practical for cleaning the touch screen.

LEDs / Power-off



LEDs functionality

On the top of BeFREE module there are LEDs. Its functionality is (from left to right):

- *1st LED*:
  - off - the BeFREE is not connected to the power
  - blinking - the BeFREE is connected to the power and is turned off
  - on - the BeFREE is running
- *2nd LED* - hard disk activity
- *3rd LED* - if it is on, then touch screen is disabled
- *4th LED* - if it is blinking, then the LEDs from 5th to 8th show the error code
- Functionality for 5th, 6th, 7th and 8th LEDs can be customized.

Four right most LEDs can show the following information:

- A LAYER THE KEYBOARD IS IN:
  - Layer 1 - 5th LED is on
  - Layer 2 - 6th LED is on
  - Layer 3 - 7th LED is on
  - Layer 4 - 8th LED is on

- FAN STATE:
  - fan is not running - all four LEDs (from 5th to 8th) are off
  - fan is running - 5th and 6th LEDs are on
  - fan is running at maximum speed - all four LEDs are on
- NONE:
  - all four LEDs are always off

Power-off

The Power-off mode can be:

- LOW ENERGY or
- STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED).

The LOW ENERGY mode turns everything off in power-off state.

If you want to enable wake-on LAN or use a Sleep mode, then the power-off mode must be set to the STANDARD option.

Power ports

Here you can turn on and off switches of the powered ports. The switches change states when the buttons are pressed.

The current values of switches can be read by clicking on the **Read** button.

The initial values (when the BeFREE is started) of switches can be set by clicking on the OK button and updating the whole configuration.

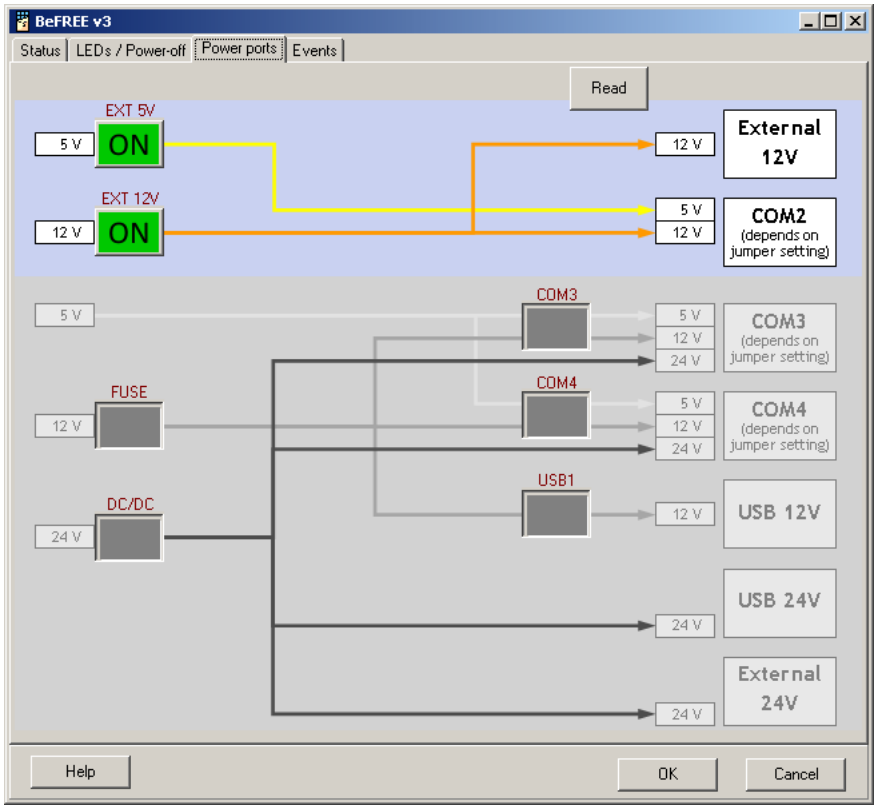
Note: The configuration must be updated in order to set initial values.

Standard power ports:

- EXTERNAL 12V
- COM2 can be powered by 5V or 12V. It can be chosen by setting a jumper inside the BeFREE module.

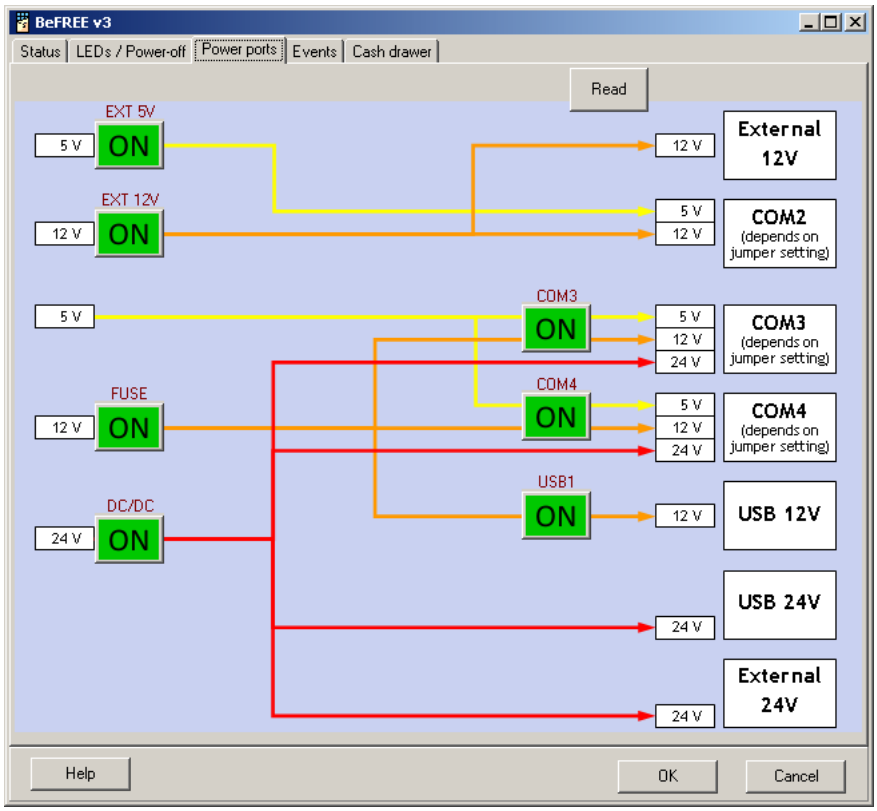
Power switches:

- **EXT 5V** turns on/off 5V on COM2.
- **EXT 12V** turns on/off External 12V and 12V on COM2.



On the powered version of BeFREE there are more power ports to be controlled.

The following diagram shows how switches are connected:



Additional power ports on the powered version of BeFREE:

- COM3 can be powered by 5V, 12V or 24V. It can be chosen by setting a jumper inside the BeFREE module.
- COM4 can be powered by 5V, 12V or 24V. It can be chosen by setting a jumper.
- USB 12V
- USB 24V
- EXTERNAL 24V

Power switches:

- **FUSE** turns on/off the 12V on COM3, COM4 and USB 12V.
- **DC/DC** turns on/off the 24V on COM3, COM4, USB 24V and External 24V.
- **COM3** turns on/off the 5V and 12V on COM3 port.
- **COM4** turns on/off the 5V and 12V on COM4 port.
- USB1 turns on/off the 12V on USB 12V port.

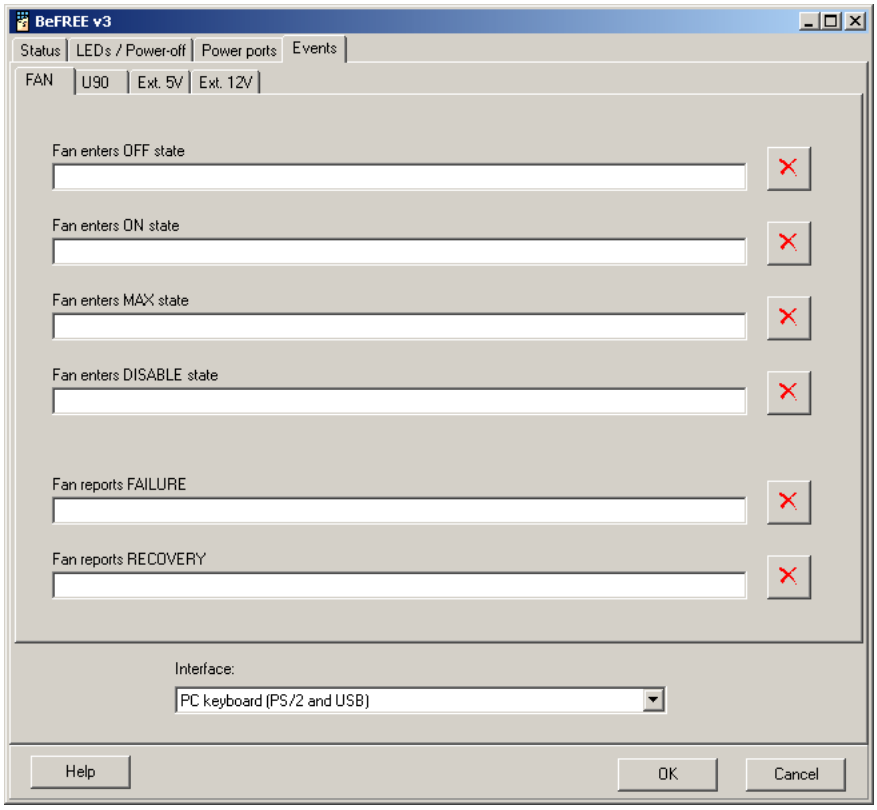
Events

An event sends its content to a system when the BeFREE enters the specific state.

Events on standard version of BeFREE:

- FAN - fan events:
  - cooling fan OFF (not running)
  - cooling fan ON (with regulation)
  - cooling fan at max-speed (100%)
  - fan-control disabled (running at 100%, without regulation)
  - cooling fan failure detected
  - cooling fan auto-recovery from failure
- U90 - USB events:
  - USB failure detected
  - USB auto-recovery from failure
- EXT. 5V - events about the 5V switch:
  - EXT-5V switched off because of failure (OC)
  - EXT-5V switched on via MID-message
  - EXT-5V switched on using AUTO-restore
- EXT. 12V - events about the 12V switch:
  - EXT-12V switched off because of OC-failure
  - EXT-12V switched off because of FBO-failure

- EXT-12V switched on via MID-message
- EXT-12V switched on using AUTO-restore

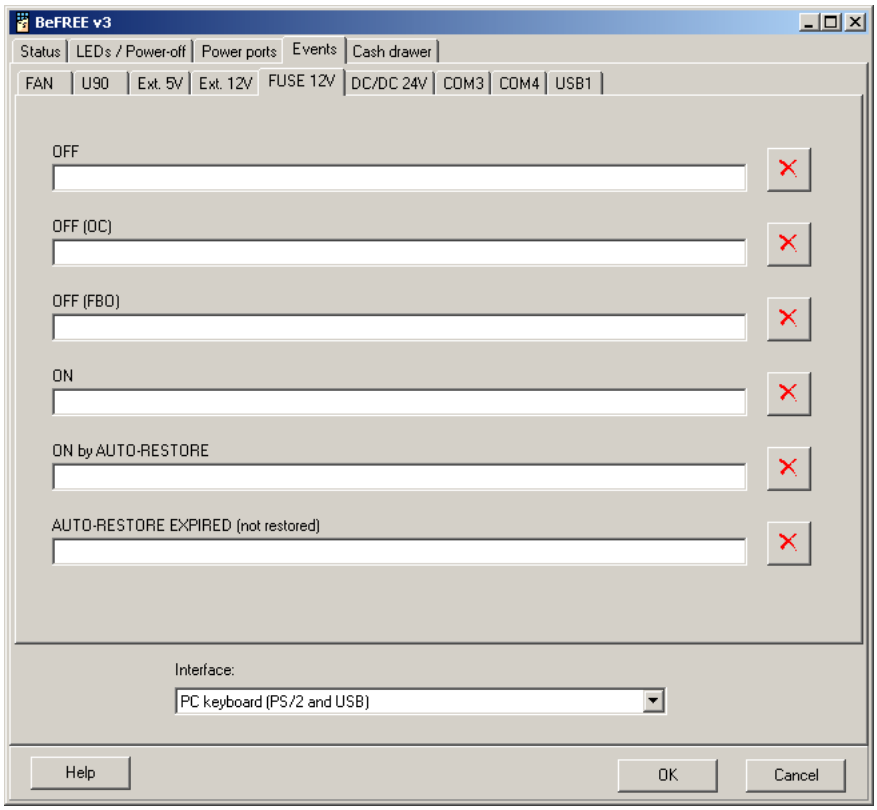


The powered version of BeFREE has additional events:

- FUSE 12V - events about the FUSE 12V:
  - FUSE-12V is off
  - FUSE-12V is off, because of OC
  - FUSE-12V is off, because of FBO
  - FUSE-12V is on
  - FUSE-12V is on, by auto-restore
  - FUSE-12V auto-restore expired (not restored)
- DC/DC 24V - events about the DC/DC:
  - DC/DC-24V is off
  - DC/DC-24V is on
- COM3 - events about the power supply of COM 3:
  - COM3 (12/5V) power-supply is off
  - COM3-12V power-supply is on
  - COM3-5V power-supply is on

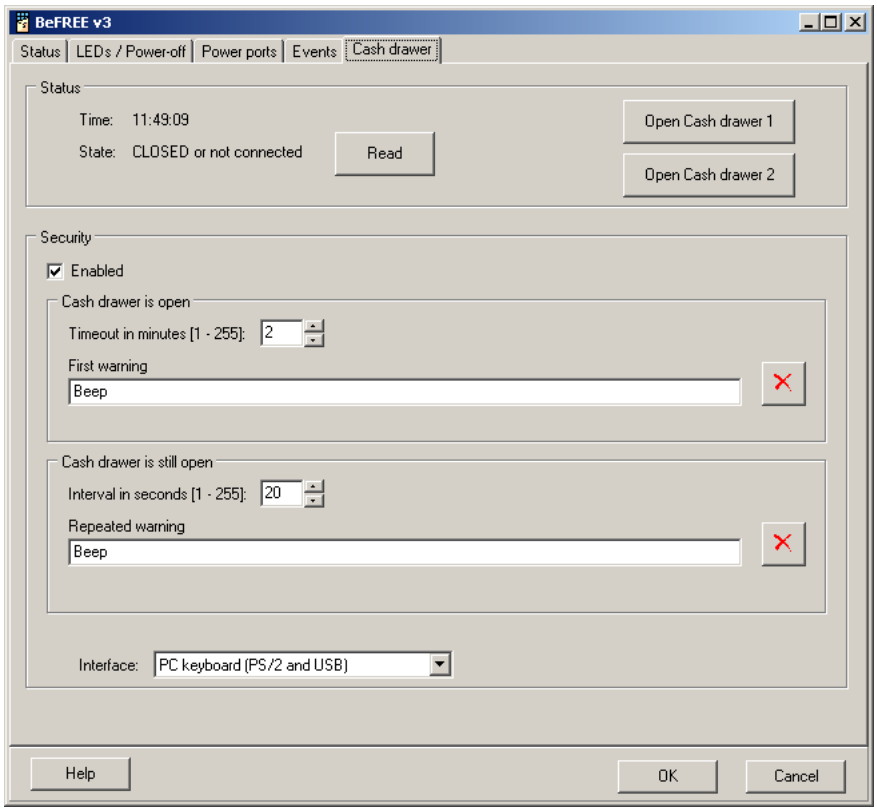
- COM3 power-supply error

- COM4 - events about the power supply of COM 4:
  - COM4 (12/5V) power-supply is off
  - COM4-12V power-supply is on
  - COM4-5V power-supply is on
  - COM4 power-supply error
- USB1 - events about the power supply of USB port
  - USB1 power-supply is off
  - USB1 power-supply is off, because FUSE-12V is off
  - USB1 power-supply is on



Cash drawer

Note: The powered version of BeFREE has the connector for the cash drawer. So the Cash drawer tab is shown on the powered version of BeFREE only.



Status

Press the **Read** button to read the cash drawer state. It can be:

- CLOSED OR NOT CONNECTED,
- OPEN.

Press the **Open Cash drawer 1/2** button to open the connected cash drawer.

Security

The BeFREE can warn you if a cash drawer is open. There can be defined the first warning and the repeated warning.

Check the ENABLE (WRITE AT UPDATE) check box to enable the security feature of cash drawer.

Cash drawer is open - first warning

The TIMEOUT IN MINUTES defines time from opening the cash drawer and sending the first warning. The FIRST WARNING content can be defined as Beep or/and any content send to the system.

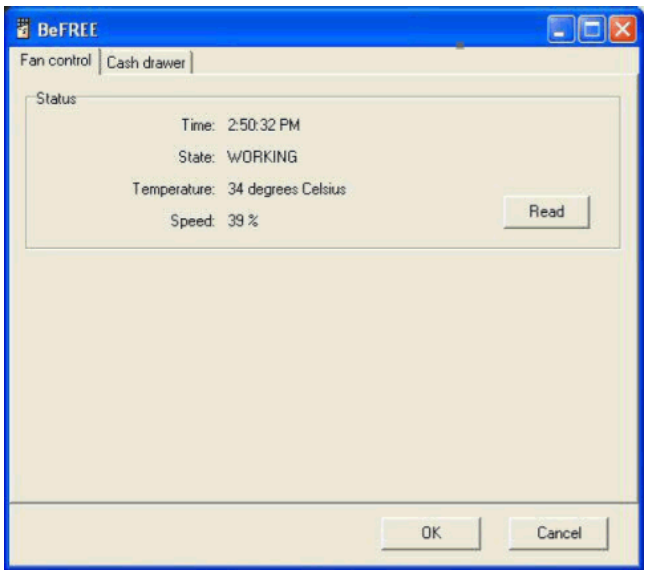
Cash drawer is still open - repeated warning

The INTERVAL IN SECONDS defines interval in which the repeated warnings are send from the first warning, if the cash drawer is still open. The REPEATED WARNING content can be defined as Beep or/and any other content send to the system.

Select the INTERFACE of the warnings.

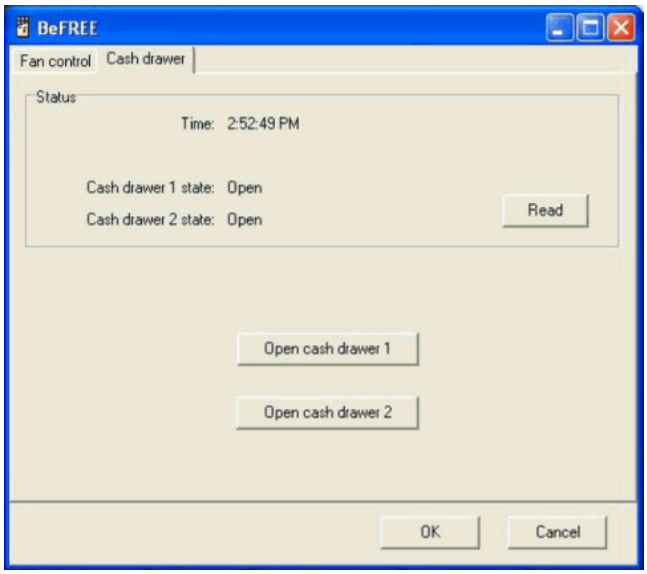
BeFREE (Celeron and Core2Duo based)

Fan control



The Fan control window is just for information purposes. Press on "Read" to get the air temperature inside BeFREE and the relative fanspeed.

Cash drawer



The Cashdrawer window is used for testing the cashdrawer port.

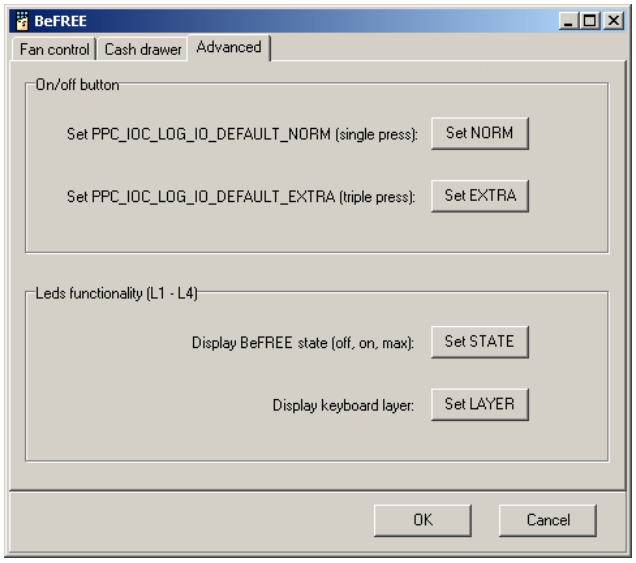
NOTE: Although the window is shown for all versions of BeFREE, it functions just for Powered BeFREEs, which have a cashdrawer port.

Press the **Read** button to get the current status of the drawer(s). In case no cashdrawer connection is present (standard and fanless BeFREE) the status *Open* is shown.

On the Powered BeFREE the status is *Closed or not connected* when no cashdrawer is present or when it is connected and closed. The Status is *Open* when the drawer is open. Use the buttons below to test opening the drawer.

NOTE: Since the connector allows for only one open/close signal, the signal for both drawers is combined. So if either one of the drawers is open both Drawer 1 and Drawer 2 indicate open.

Advanced



Normally this tab is hidden since there is a risk of not being able to start the BeFREE again if this is set by mistake.

To show this tab you have to go to ChangeMe's "debug mode" by pressing the keys **Ctrl** + **Backspace** at the same time when in the main window. You will see 2 extra menu items in the menu bar: Extended Tools and Debug.

When you now click on the BeFREE icon again you will see the extra **Advanced** tab.

On/off button

Advanced ON/OFF is a feature to protect the system against accidental and unauthorized turning on or off.

To turn the BeFREE on or off when in this mode, the user needs to press the power button 3 times in a fast sequence.

Set EXTRA sets the Advanced ON/OFF feature.

Set NORM restores the ON/OF configuration to normal, default behavior

Testing: The best is to test this feature before turning off the system!

LED functionality

The BeFREE LEDs on the top of the frame labeled L1 to L4 can show:

- the state of BeFREE fan control (default) or
- the current layer of Tipro controller.

The status of the fancontrol has the following meaning:

- L1 - Fan control is off
- L2 - Fan control is working, fanspeed is relative to temperature
- L3 - Temperature is over maximum, fan at 100%. Serious damage might occur!
- L4 - Error on fan control

Choose **Set State** to show the fan status on the LEDs L1 – L4.

Optionally you can also display the current layer of the Tipro controller, as is displayed on Tipro keyboards. To do this press the button **Set Layer**.

Programming a BeFREE 10 (BF10)

BeFREE 10 module is a 10.4" Touchcomputer with Integrated Intercom. It can be combined with FREE modules.

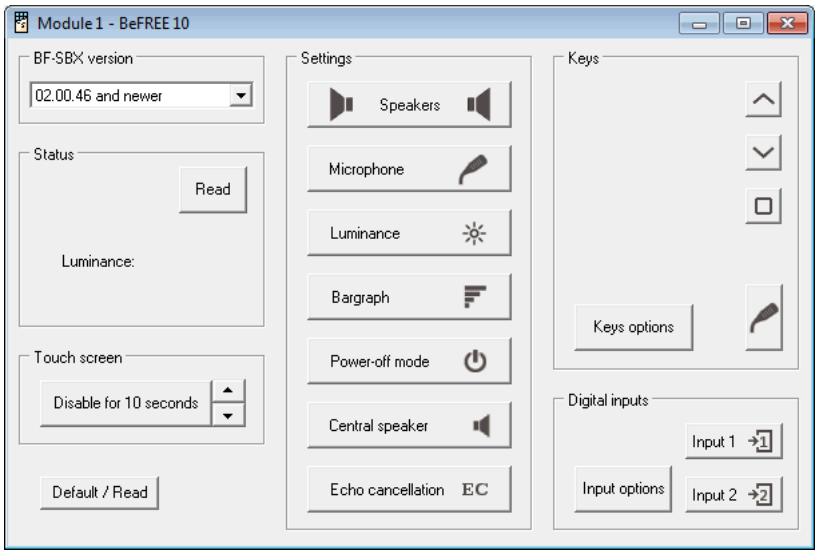
There are 3 options:

- standard BF10

- BF10 without a gooseneck microphone

- BF10 with echo cancellation

BF10 form


Module 1 - BeFREE 10
BF-SBX version
02.00.46 and newer
Status
Read
Luminance:
Touch screen
Disable for 10 seconds
Default / Read
Settings
Speakers
Microphone
Luminance
Bargraph
Power-off mode
Central speaker
Echo cancellation EC
Keys
Keys options
Digital inputs
Input 1
Input options
Input 2

Status

Press the **Read** button to get the luminance of LCD.

Touch screen

Press the **Disable for ... seconds** button to disable the touch screen. Timeout can be adjusted from 10 to 60 seconds by clicking on the up and down arrows.

Settings

Settings of the BF10 module can be defined by clicking on the **Speakers**, **Microphone**, **Luminance**, **Bargraph**, **Power-off mode**, **Central speaker** and **Echo cancellation** buttons.

Note: Some BeFREE 10 versions do not support all settings. (e.g. A version without gooseneck microphone does not support microphone settings...)

Keys

Special functions of BF10 keys can be defined by clicking on the **Keys options** button.

Content of keys (**Up key**, **Down key**, **Home key** and **Microphone key**) can be defined by clicking on them. The ***Key content form*** opens.

Digital inputs

There are 2 inputs. Their contents can be defined by clicking on the **Input** button. The ***Key content form*** opens.

Special functions of digital inputs can be defined by clicking on the **Input options** button.

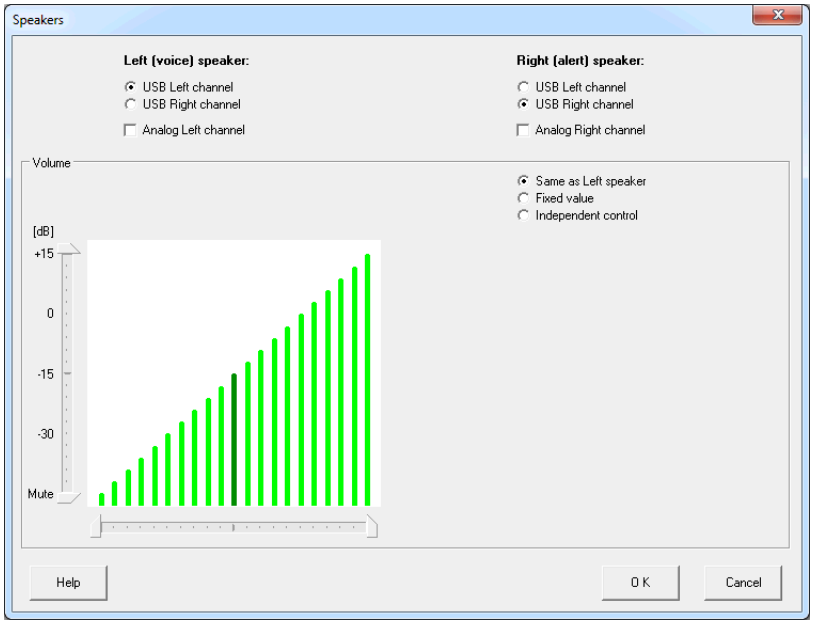
Default / Read

The **Default/Read** button:

- The **Set default** option sets all settings (Speakers, Microphone, Luminance, Bargraph, Power-off mode, Central speaker, Echo cancellation, Keys options and Input options) except Keys and Digital inputs contents to default values.

- The **Read settings from module** option reads the settings (Speakers, Microphone, Luminance, Bargraph, Power-off mode, Central speaker and Echo cancellation) from the connected BeFREE 10 module. It does not read Keys options, Input options, Keys and Digital inputs contents.

Speakers



Audio channels

Stereo speakers has **left (voice)** and **right (alert) speaker**. USB channels are always attached to them. It can be selected which USB CHANNEL (LEFT or RIGHT) is played on each of them.

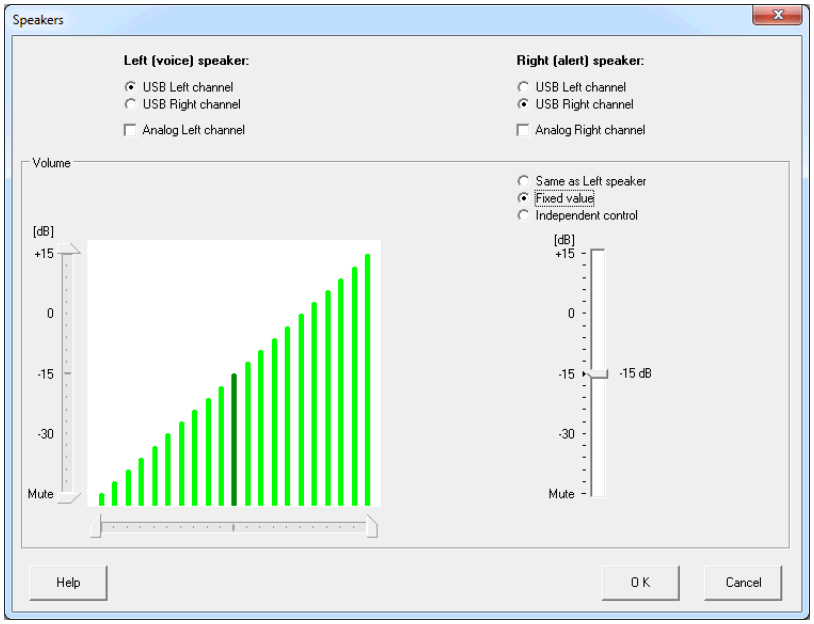
Analog audio can be enabled additionally to the **USB audio**, which is always enabled. The analogue audio is disabled by default. EACH CHANNEL can be enabled separately.

Volume control - same characteristic for both speakers

Volume characteristics for potentiometer can be customized by using the graph:

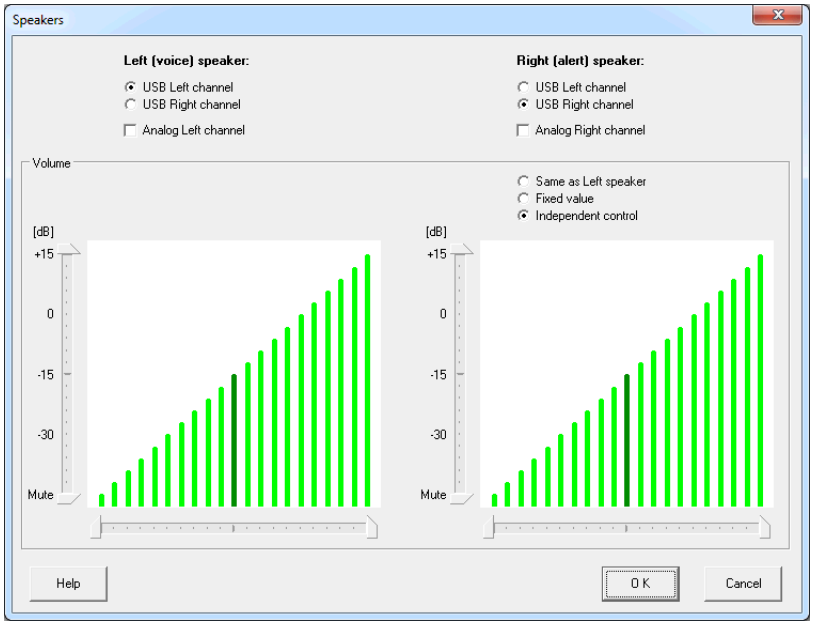
- Maximum and minimum values can be adjusted by moving sliders in the vertical bar (dB).
- Bargraph steps can be adjusted by moving sliders in the horizontal bar.
- Initial value of volume can be set by clicking in the graph.

Dual volume control - right speaker is set to fixed value



BeFREE 10 modules that have BF-SBX with firmware version 02.00.xx, where xx is 3A or above, support dual volume control. Each speaker can have its own volume control. The right speaker, that can be used for alert, can be controlled in the same way as left speaker or it can be set to a fixed value that does not change when the potentiometer is moved.

Independent volume control - each speaker has its own characteristic

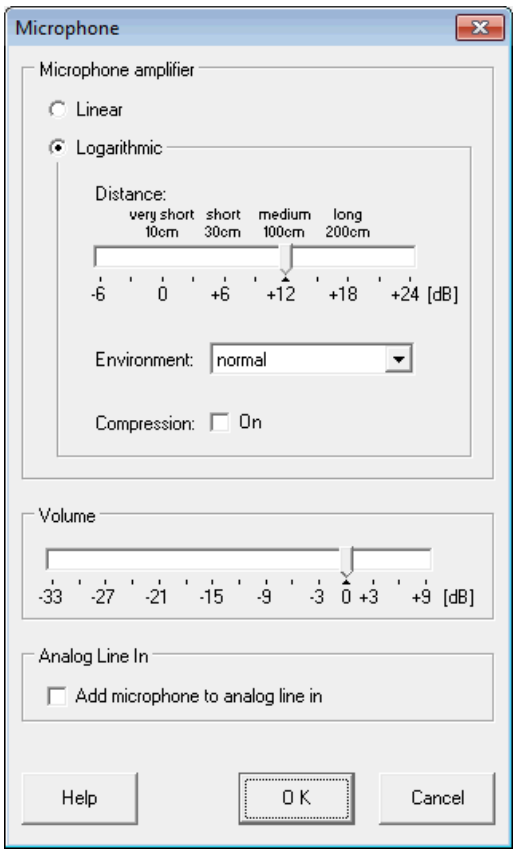


BeFREE 10 modules that have BF-SBX with firmware version 02.00.xx, where xx is 46 or above, support independent volume control for each speaker. Their encoder incorporates a push-switch/key. In this mode their internal push-switch is utilized to toggle the speaker to be adjusted. Currently adjustable speaker is indicated on the Stripe by the respective Speaker Indicator.

Microphone

The appearance of the Microphone form depends on the version of BF-SBX:

- 02.00.46 AND NEWER



Microphone amplifier can be set to LINEAR or LOGARITHMIC (default).

When it is set to logarithmic there can be defined additional settings:

Distance defines a distance of a person from the microphone. It is defined in decibels. The following approximate values can be used:

- 0 DB - VERY SHORT (~10 CM)
- +6 DB - SHORT (~30 CM)
- +12 DB - MEDIUM (~100 CM)
- +18 DB - LONG (~200 CM)

Environment indicates the environment where the Speakerbox is used. It can be set to:

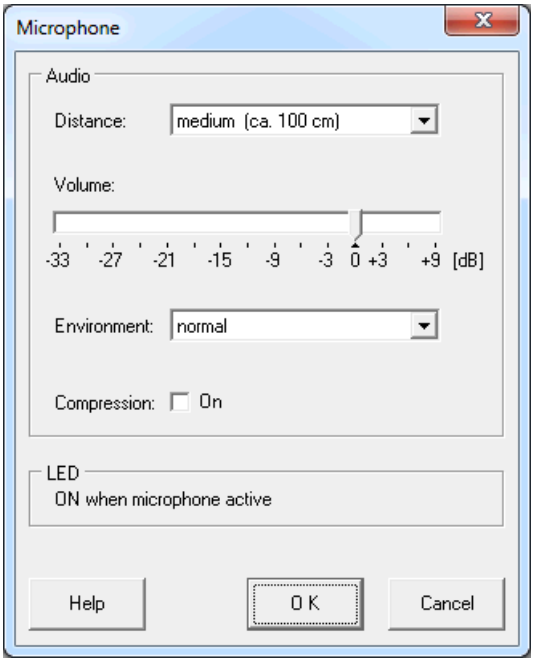
- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

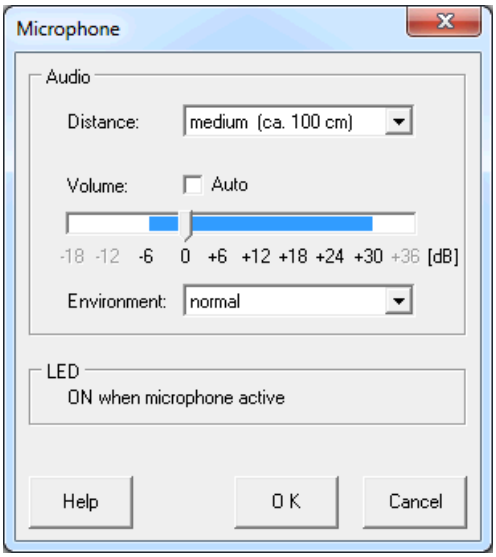
Microphone **Volume** can be set using the track bar. If it is put more to the right, its gain is higher. If it is put more to left it is lower.

Microphone is always connected to USB audio CODECs. Additionally it can be connected to the **Analog Line in**. It is disabled by default.

- 02.00.3A - 02.00.45



- 02.00.39 AND EARLIER



Distance defines a distance of a person from the microphone. It can be:

- VERY SHORT (~10 CM)
- SHORT (~30 CM)
- MEDIUM (~100 CM)
- LONG (~200 CM)

Note: If the microphone is to be used also at considerably shorter distances and/or voice dynamics is wide (up to very loud), it is advised to set the Volume to 0 dB in order to prevent possible signal clipping/distortion in all cases.

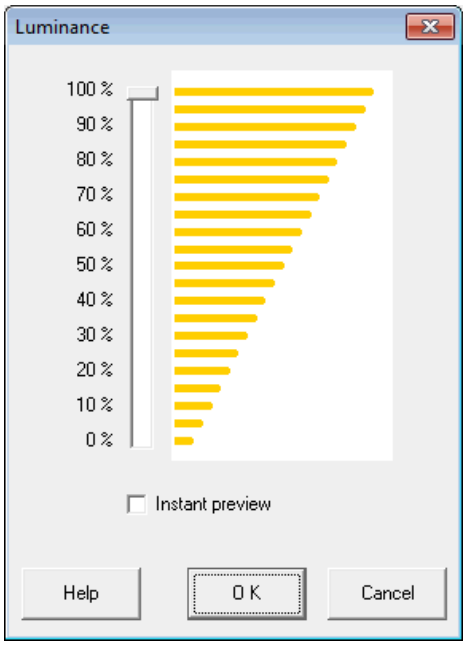
Microphone **Volume** can be set using the track bar. If it is put more to the right, its gain is higher. If it is put more to left it is lower. In modules where version of BF-SBX is 02.00.29 and earlier the scale is adapted according to the **Distance** setting.

Environment indicates the environment where the Speakerbox is used. It can be set to:

- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression (Auto) can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

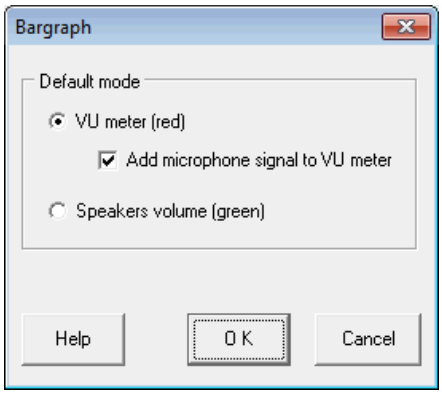
Luminance



Luminance can be set to a value form 0% to 100% in steps of 5%.

If the **Instant preview** box is checked, then the setting are shown immediately on the display as they are changed in the form.

Bargraph



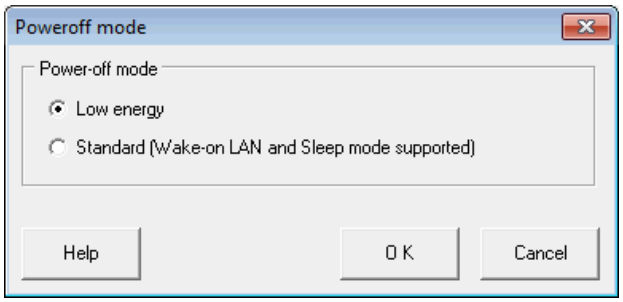
Default mode defines what is shown on the bargraph by default. It can show:

- state of VU METER (RED)
- SPEAKERS VOLUME (GREEN)

VU meter always shows signal on the speakers. Additionally to that it can also add MICROPHONE SIGNAL. It is added by default, if there is gooseneck microphone.

Note: Not all versions of BeFREE 10 support adding/removing of microphone signal to VU meter.

Power-off mode



The **Power-off mode** can be:

- LOW ENERGY or
- STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED).

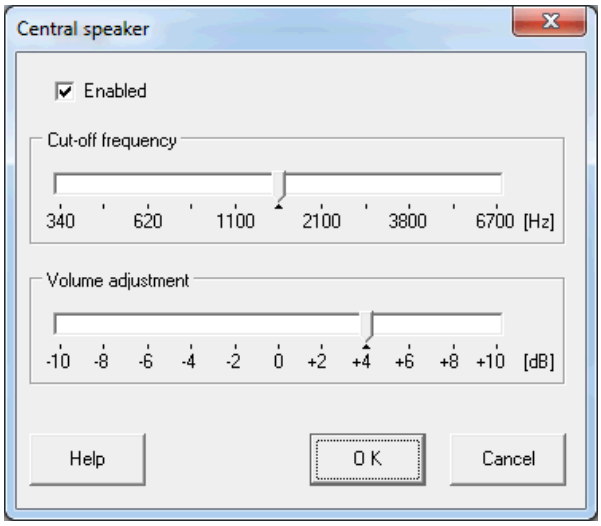
The LOW ENERGY mode turns everything off in power-off state. This is the default state.

If you want to enable wake-on LAN or use a Sleep mode, then the power-off mode must be set to the STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED) option.

Central speaker

The appearance of the Central speaker form depends on the version of BF-SBX:

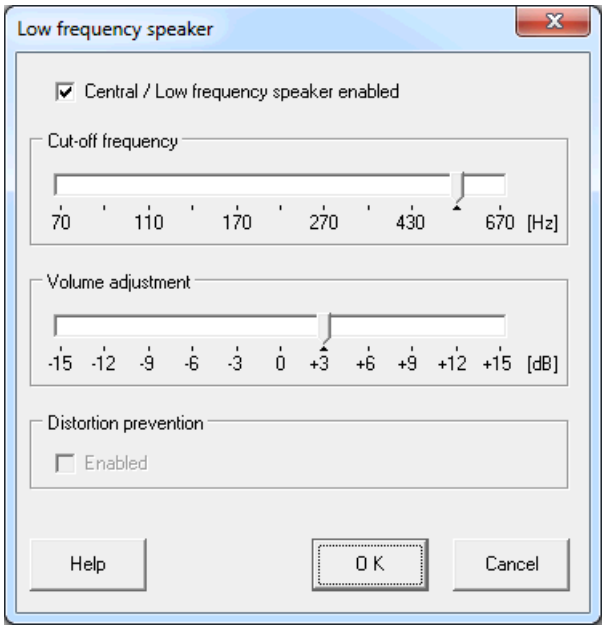
- 02.00.4C AND NEWER



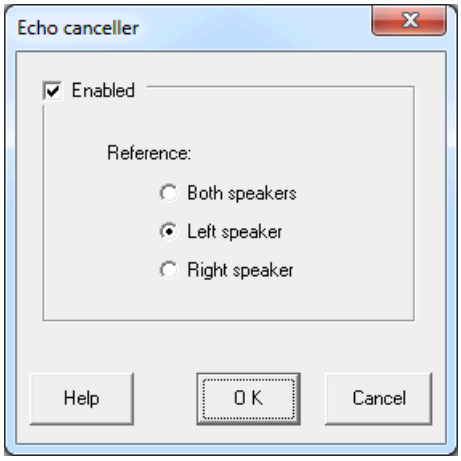
Central speaker is a low-frequency loudspeaker. It is enabled by default. It can be disabled by unchecking the ENABLED box.

It can be controlled by setting the **Cut-off frequency** value in Hz and the **Volume adjustment** value in dB.

- 02.00.4B AND EARLIER



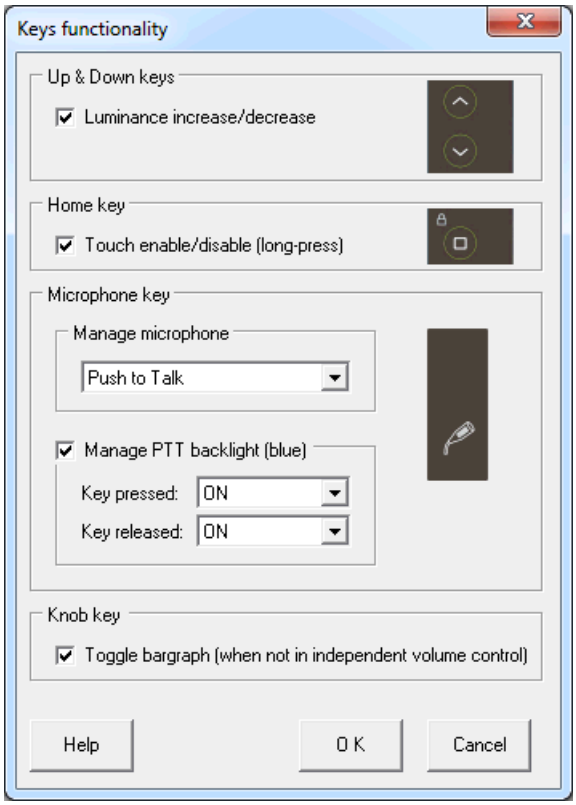
Echo canceller



If the BeFREE touchcomputer has an echo canceller in itself, it is enabled by default. It can be disabled by unchecking the ENABLED box.

Its **reference** can be set to BOTH STEREO SPEAKERS or ONE of them. Left (voice) speaker by default.

Keys functionality



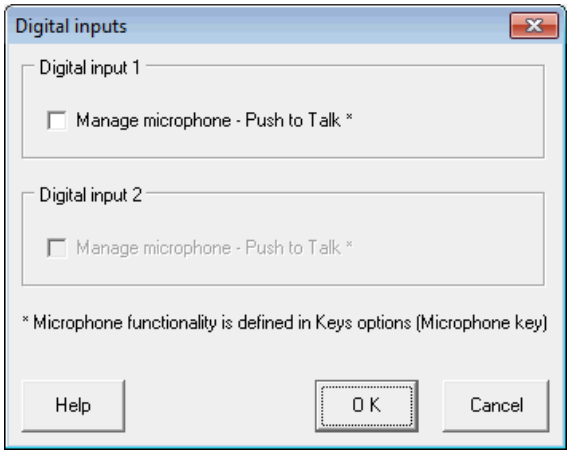
BeFREE 10 keys can have defined special functions:

- **Up & Down keys** - increase and decrease of LCD luminance.
- **Home key** - toggle between disable and enable touch screen. The key must be hold down for approximately 1 second to disable touch screen.
- **Microphone key** can have one of the following functionalities:
  - PUSH TO TALK - the microphone is muted; hold the key down to activate it.
  - PUSH TO MUTE - the microphone is active; hold the key down to mute it.
  - TOGGLE (INITIAL STATE IS TALK) - the microphone is active; press the key to toggle between muted and active microphone.
  - TOGGLE (INITIAL STATE IS MUTE) - the microphone is muted; press the key to toggle between muted and active microphone.
  - ALWAYS ON - MIC CONTROLLER BY SOFTWARE - the key has no function to microphone and its LED. Microphone and its LED can be controlled by software (e.g. using Tipro HIDAPI).
  - ALWAYS OFF - the key has no function to microphone and its LED.
- **Blue backlight** of the microphone key can be defined for pressed and released key separately. It can be one of the following states:
  - ON

- OFF
- BLINKING

Knob key - the encoder incorporates a push-switch/key which enables navigation through different bar-graph modes: Volume, Brightness and VU meter. In the Volume mode both Speaker Indicators on the Stripe are illuminated. This functionality is supported by BeFREE 10 that version of BF-SBX is 02.00.46 and newer. When the knob is used for independent volume control for each speaker, this option cannot be selected.

Digital input options



Digital input 1 can be used to MANAGE GOOSENECK MICROPHONE. Check the box to enable it. The managing functionality is the same as defined for the Microphone (PTT) key. So if you would like to change it, it has to be changed in the Key options form.

Programming BeFREE 20 (BF20)

BeFREE 20 (BF20) is a Touchcomputer with Integrated Intercom. It can be combined with FREE modules.

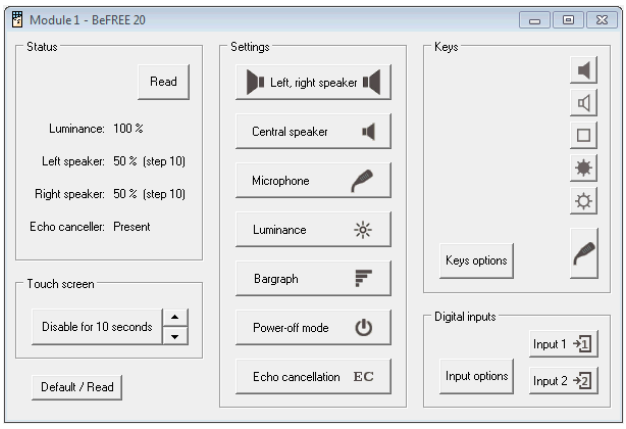
There are 3 options:

- standard BF20

- BF20 with echo cancellation

- BF20 without a gooseneck microphone

BF20 form



Status

Press the **Read** button to get the luminance of LCD, volume of speakers and presence of echo canceller.

Touch screen

Press the **Disable for ... seconds** button to disable the touch screen. Timeout can be adjusted from 10 to 60 seconds by clicking on the up and down arrows.

Settings

Settings of the BeFREE 20 module can be defined by clicking on the **Left, right speaker**, **Central speaker**, **Microphone**, **Luminance**, **Bargraph**, **Power-off mode** and **Echo cancellation** buttons.

Note:
The **Microphone** button is disabled for BeFREE 20 module without gooseneck microphone.
The **Echo cancellation** button is disabled for BeFREE 20 module without echo canceller.

Keys

Special functions of BeFREE 20 keys can be defined by clicking on the **Keys options** button.

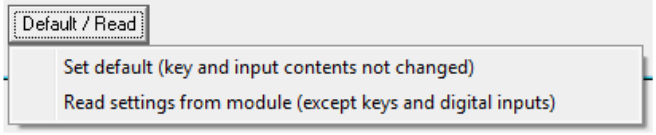
Content of keys (**Volume up/down**, **Home**, **Luminance up/down** and **Microphone key**) can be defined by clicking on them. The ***Key content form*** opens.

Digital inputs

Special functions of BeFREE 20 digital inputs can be defined by clicking on the **Input options** button.

There are 2 inputs. Their contents can be defined by clicking on the **Input** button. The ***Key content form*** opens.

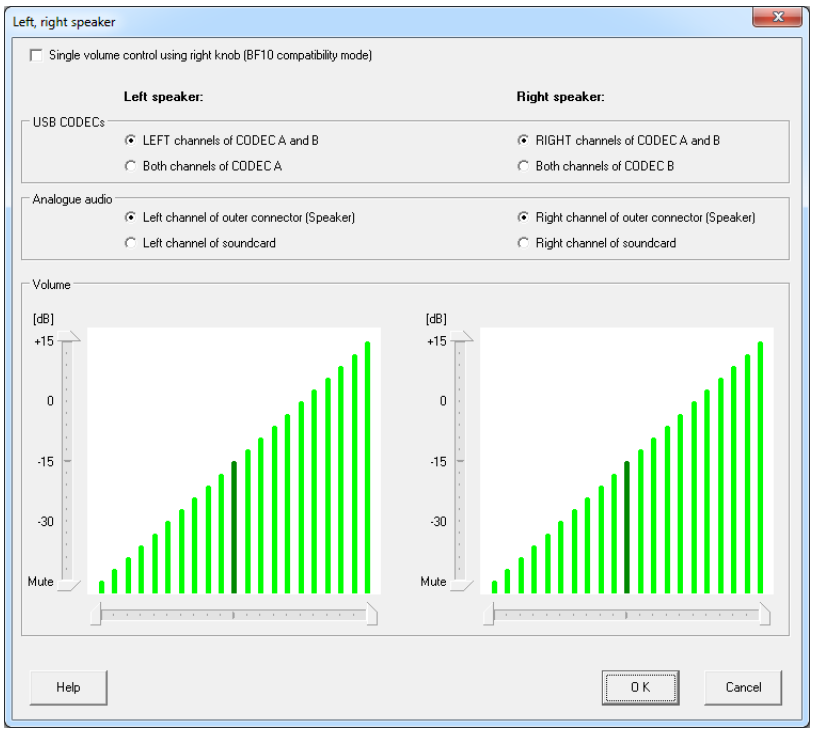
Default / Read



The **Default/Read** button:

- The **Set default** option sets all settings (Left, right speaker, Central speaker, Microphone, Luminance, Bargraph, Power-off mode, Echo cancellation, Keys options and Input options) except Keys and Digital inputs contents to default values.
- The **Read settings from module** option reads the settings (Left, right speaker, Central speaker, Microphone, Luminance, Bargraph, Power-off mode and Echo cancellation) from the connected BeFREE 20 module. It does not read Keys options, Input options and their (Keys and Digital inputs) contents.

Left, right speaker



USB audio channels

Stereo speakers have **left** and **right loudspeaker**. 2 USB audio CODECs (CODEC A and B) are always attached to them. CODECs and their channels can be connected to the loudspeakers in one of the following ways:

- LEFT CHANNELS OF CODEC A AND CODEC B are played on the Left loudspeaker and RIGHT CHANNELS OF BOTH CODECS are played on the Right loudspeaker or
- BOTH CHANNELS OF CODEC A are played on the Left loudspeaker and BOTH CHANNELS OF CODEC B are played on the Right loudspeaker.

Analogue audio channels

Analogue audio is connected additionally to the **USB audio**. There are 2 options:

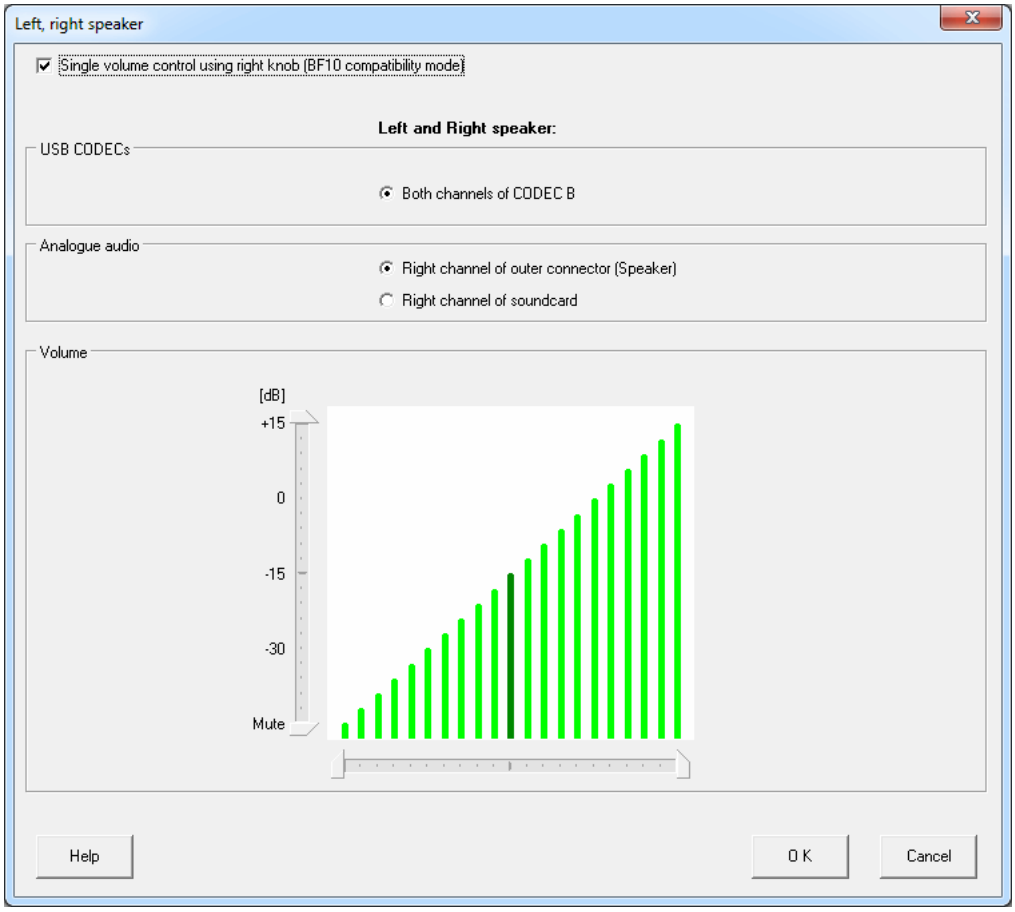
- ANALOGUE AUDIO FROM OUTER CONNECTOR (LOUDSPEAKER SIGN) is connected to the left and right speaker by default.(BF-SBX version 02.00.4C and newer)
- ANALOGUE AUDIO FROM SOUNDCARD can be connected to the left and/or right speaker.

Dual volume control

Left and right loudspeaker can have its own volume control. **Volume** characteristics for each potentiometer can be customized by using the graphs:

- Maximum and minimum values can be adjusted by moving sliders in the vertical bar (dB).
- Bargraph steps can be adjusted by moving sliders in the horizontal bar.
- Initial value of volume can be set by clicking in the graph.

Single volume control (BF10 compatability mode)



When the SINGLE VOLUME CONTROL box is checked, the form is simplified. Volume of both speakers can be controlled using the right knob only.

Both channels of USB CODEC B are connected to left and right speaker.

Analogue audio is connected additionally to the **USB audio**. There are 2 options:

- RIGHT CHANNEL FROM OUTER CONNECTOR (LOUDSPEAKER SIGN) is connected to all speakers by default.(BF-SBX version 02.00.4C and newer)
- RIGHT CHANNEL FROM SOUNDCARD can be connected to all speakers.

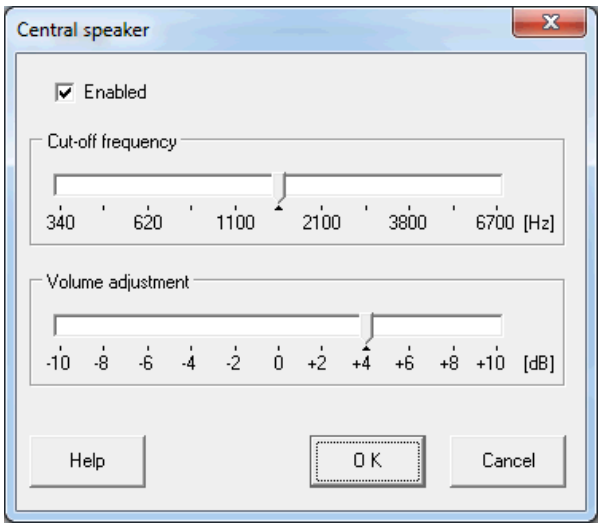
Their **volume** characteristics can be customized by using the graph:

- Maximum and minimum values can be adjusted by moving sliders in the vertical bar (dB).
- Bargraph steps can be adjusted by moving sliders in the horizontal bar.
- Initial value of volume can be set by clicking in the graph.

Central speaker

The appearance of the Central speaker form depends on the version of BF-SBX:

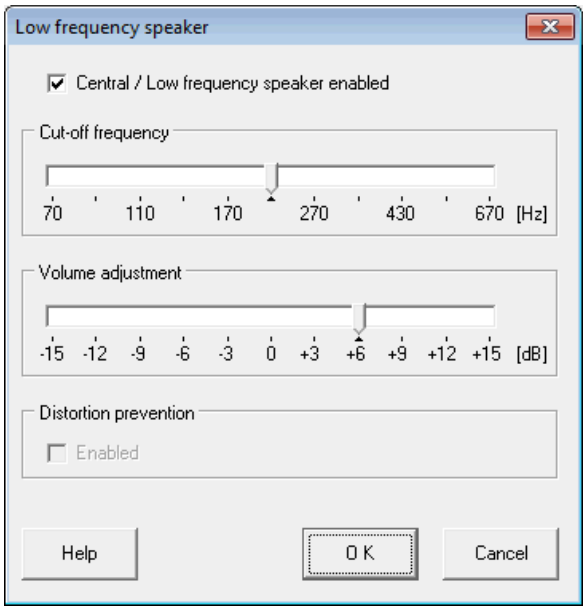
- 02.00.4C AND NEWER



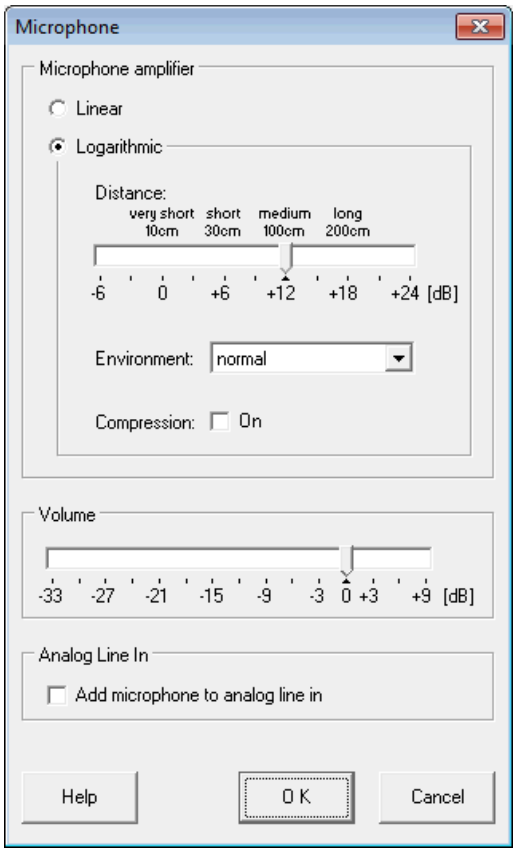
Central speaker is a low-frequency loudspeaker. It is enabled by default. It can be disabled by unchecking the ENABLED box.

It can be controlled by setting the **Cut-off frequency** value in Hz and the **Volume adjustment** value in dB.

- 02.00.4B AND EARLIER



Microphone


Microphone
Microphone amplifier
Linear
Logarithmic
Distance:
very short 10cm
short 30cm
medium 100cm
long 200cm
-6 0 +6 +12 +18 +24 [dB]
Environment:
normal
Compression:
On
Volume
-33 -27 -21 -15 -9 -3 0 +3 +9 [dB]
Analog Line In
Add microphone to analog line in
Help
OK
Cancel

Microphone amplifier can be set to LINEAR or LOGARITHMIC (default).

When it is set to logarithmic there can be defined additional settings:

Distance defines a distance of a person from the microphone. It is defined in decibels. The following approximate values can be used:

- 0 DB - VERY SHORT (~10 CM)
- +6 DB - SHORT (~30 CM)
- +12 DB - MEDIUM (~100 CM)
- +18 DB - LONG (~200 CM)

Environment indicates the environment where the Speakerbox is used. It can be set to:

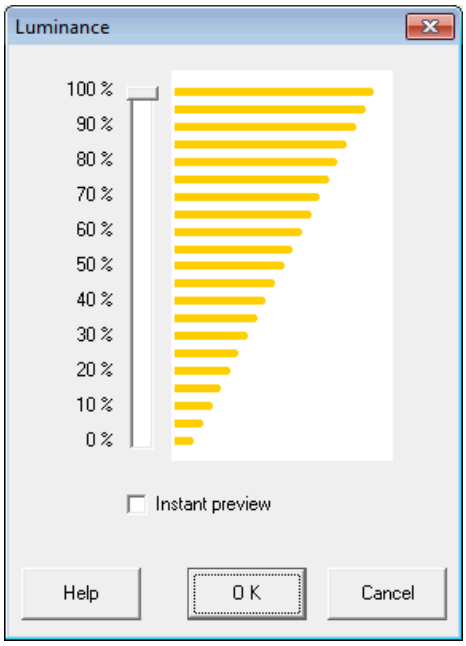
- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

Microphone **Volume** can be set using the track bar. If it is put more to the right, its gain is higher. If it is put more to left it is lower.

Microphone is always connected to USB audio CODECs. Additionally it can be connected to the **Analog Line in**. It is disabled by default.

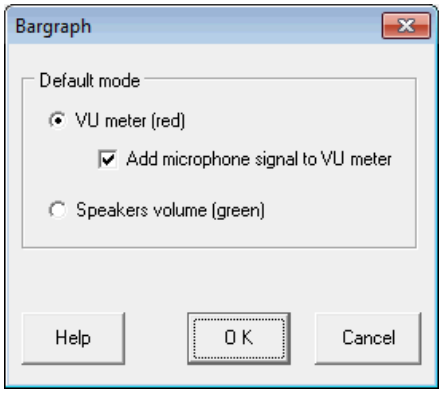
Luminance



Luminance can be set to a value form 0% to 100% in steps of 5%.

If the INSTANT PREVIEW box is checked, then the setting are shown immediately on the display as they are changed in the form.

Bargraph

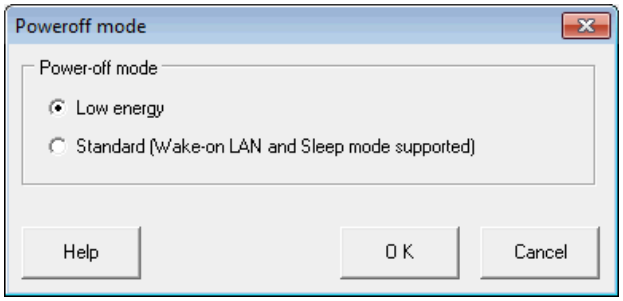


Default mode defines what is shown on the bargraph by default. It can show:

- state of VU METER (RED)
- SPEAKERS VOLUME (GREEN)

VU meter always shows signal on the speakers. Additionally to that it can also add MICROPHONE SIGNAL. It is added by default, if there is gooseneck microphone.

Power-off mode



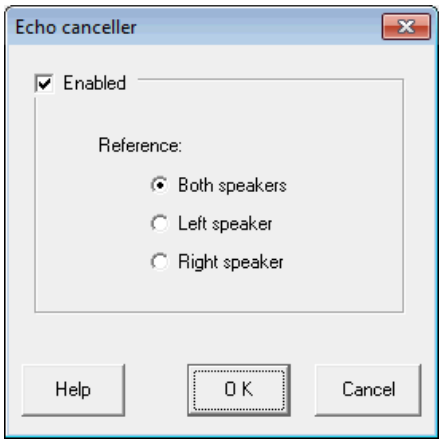
The **Power-off mode** can be:

- LOW ENERGY or
- STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED).

The LOW ENERGY mode turns everything off in power-off state. This is the default state.

If you want to enable wake-on LAN or use a Sleep mode, then the power-off mode must be set to the STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED) option.

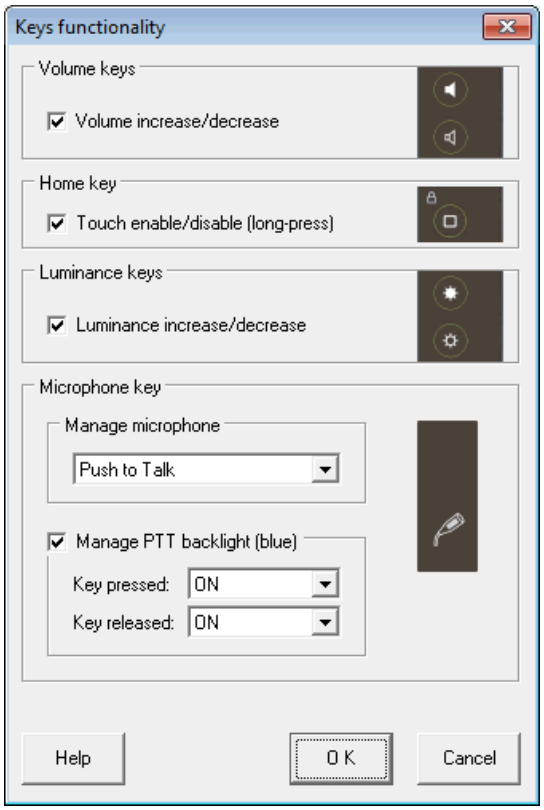
Echo cancellation



If the BeFREE touchcomputer has an echo canceller in itself, it is enabled by default. It can be disabled by unchecking the ENABLED box.

Its **reference** can be set to BOTH STEREO SPEAKERS (default) or ONE of them.

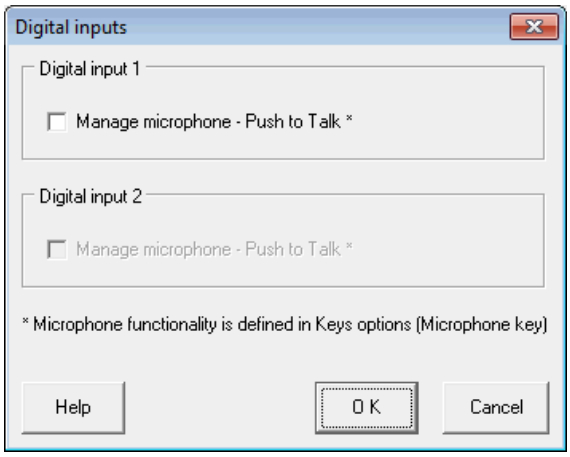
Keys options



BeFREE 20 keys can have defined special functions:

- **Volume keys** - increase and decrease volume of speakers. It is shown on the bargraph in green colour.
- **Home key** - toggle between disabled and enabled touch screen. The key must be hold down for approximately 1 second to disable the touch screen.
- **Luminance keys** - increase and decrease the luminance of LCD. It is shown on the bargraph in orange colour.
- **Microphone key** can have one of the following functionalities:
  - PUSH TO TALK - the microphone is muted; hold the key down to activate it.
  - PUSH TO MUTE - the microphone is active; hold the key down to mute it.
  - TOGGLE (INITIAL STATE IS TALK) - the microphone is active; press the key to toggle between muted and active microphone.
  - TOGGLE (INITIAL STATE IS MUTE) - the microphone is muted; press the key to toggle between muted and active microphone.
  - ALWAYS ON - the microphone is active. It can be managed using software.
  - ALWAYS OFF - the microphone is muted. It can be managed using software.
- Behaviour of the **PTT key backlight** (in blue colour) can be defined for pressed key and released key. It can be one of the following states:
  - ON
  - OFF
  - BLINKING

Digital inputs options



Digital input 1 can be used to MANAGE GOOSENECK MICROPHONE. Check the box to enable it. The managing functionality is the same as defined for the Microphone (PTT) key. So if you would like to change it, it has to be changed in the Key options form.

Programming BeFREE 22 (BF22)

BeFREE 22 (BF22) is a Touchcomputer with Integrated Intercom. It can be combined with FREE modules.

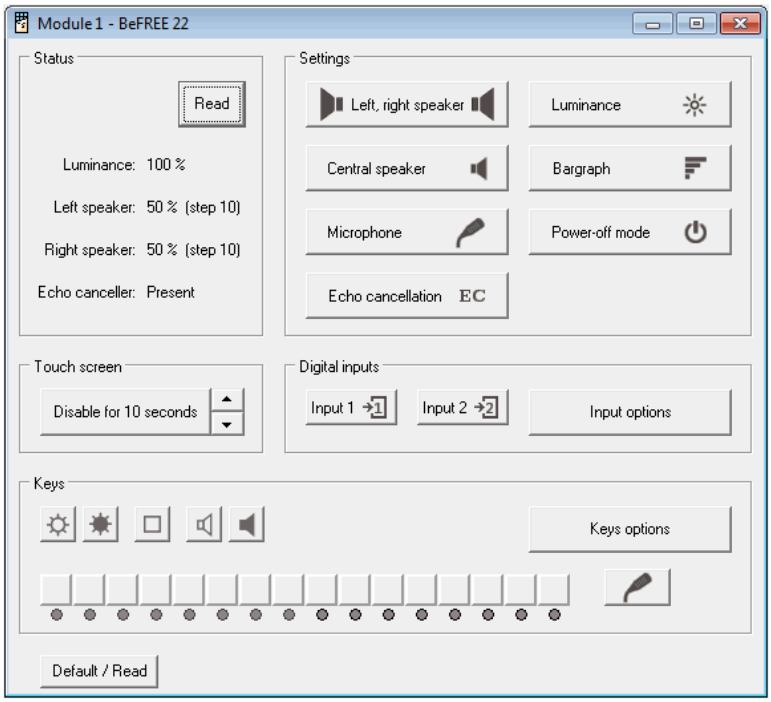
There are 3 options:

- standard BF22

- BF22 with echo cancellation

- BF22 without a gooseneck microphone

BF22 form


Module 1 - BeFREE 22
Status
Read
Luminance: 100 %
Left speaker: 50 % (step 10)
Right speaker: 50 % (step 10)
Echo canceller: Present
Settings
Left, right speaker
Luminance
Central speaker
Bargraph
Microphone
Power-off mode
Echo cancellation EC
Touch screen
Disable for 10 seconds
Digital inputs
Input 1
Input 2
Input options
Keys
Keys options
Default / Read

Status

Press the **Read** button to get the luminance of LCD, volume of speakers and check the presence of the echo canceller.

Touch screen

Press the **Disable for ... seconds** button to disable the touch screen. Timeout can be adjusted from 10 to 60 seconds by clicking on the up and down arrows.

Settings

Settings of the BeFREE 22 module can be defined by clicking on the **Left, right speaker**, **Central speaker**, **Microphone**, **Luminance**, **Bargraph**, **Power-off mode** and **Echo cancellation** buttons.

Note:
The **Microphone** button is disabled for BeFREE 22 module without gooseneck microphone.
The **Echo cancellation** button is disabled for BeFREE 22 module without echo canceller.

Keys

Special functions of BeFREE 22 keys can be defined by clicking on the **Keys options** button.

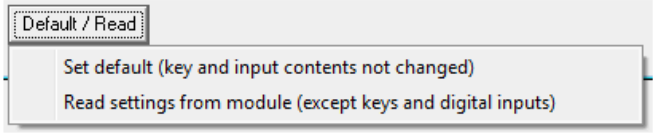
Content of keys (**Luminance up/down**, **Home**, **Volume up/down** and **Microphone key**) can be defined by clicking on them. The ***Key content form*** opens.

Digital inputs

Special functions of BeFREE 22 digital inputs can be defined by clicking on the **Input options** button.

There are 2 inputs. Their contents can be defined by clicking on the **Input** button. The ***Key content form*** opens.

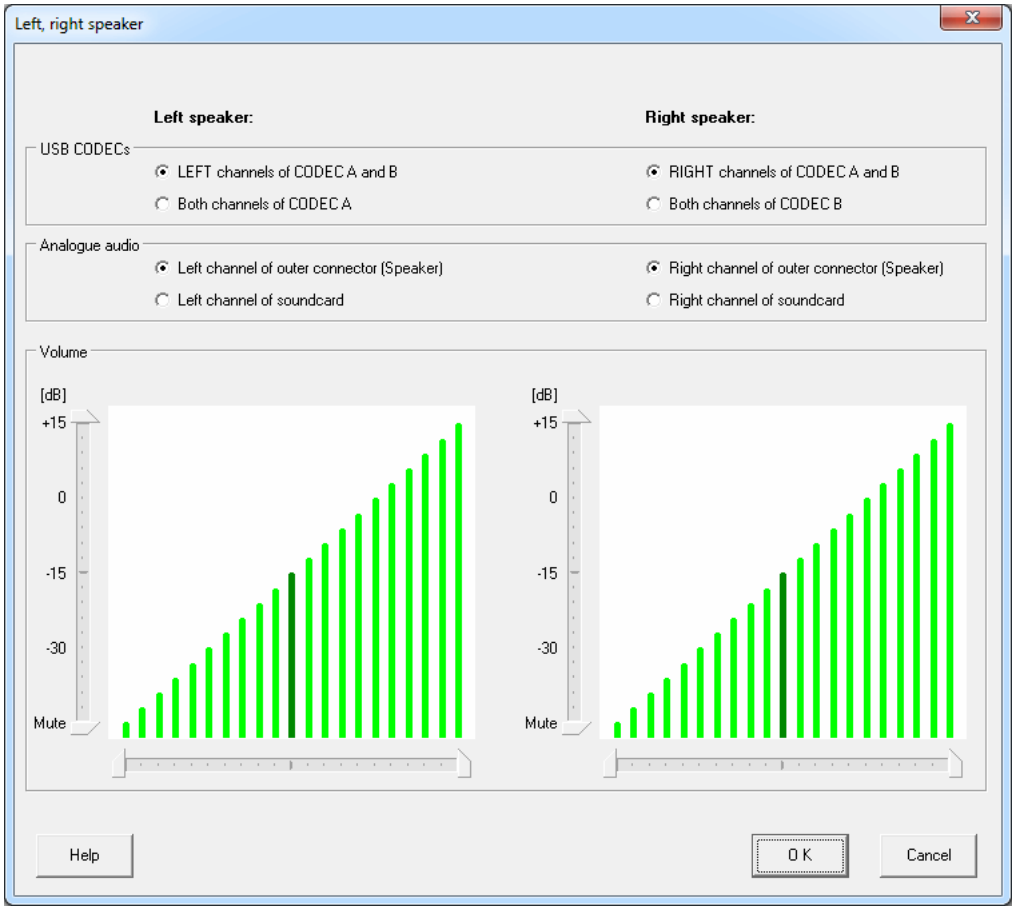
Default / Read



The **Default/Read** button:

- The **Set default** option sets all settings (Left, right speaker, Central speaker, Microphone, Luminance, Bargraph, Power-off mode, Echo cancellation, Keys options, Input options and Line keys LED states) except Keys and Digital inputs contents to default values.
- The **Read settings from module** option reads the settings (Left, right speaker, Central speaker, Microphone, Luminance, Bargraph, Power-off mode, Echo cancellation and Line keys LED states) from the connected BeFREE 22 module. It does not read Keys options, Input options and their (Keys and Digital inputs) contents.

Left, right speaker



USB audio channels

Stereo speakers have **left** and **right loudspeaker**. 2 USB audio CODECs (CODEC A and B) are always attached to them. CODECs and their channels can be connected to the loudspeakers in one of the following ways:

- LEFT CHANNELS OF CODEC A AND CODEC B are played on the Left loudspeaker and RIGHT CHANNELS OF BOTH CODECS are played on the Right loudspeaker or
- BOTH CHANNELS OF CODEC A are played on the Left loudspeaker and BOTH CHANNELS OF CODEC B are played on the Right loudspeaker.

Analogue audio channels

Analogue audio is connected additionally to the **USB audio**. There are 2 options:

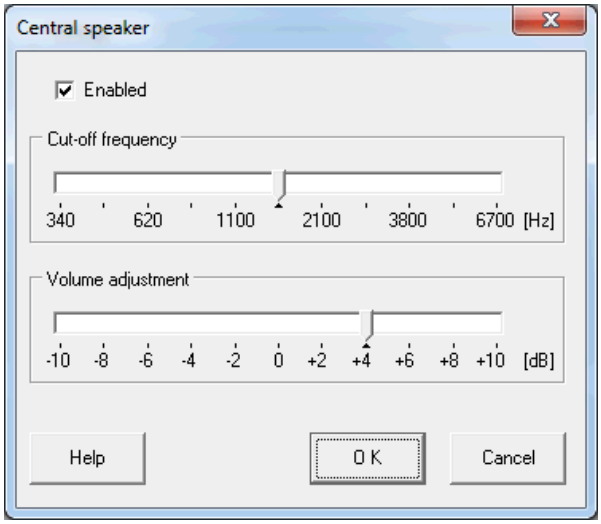
- ANALOGUE AUDIO FROM OUTER CONNECTOR (LOUDSPEAKER SIGN) is connected to the left and right speaker by default.
- ANALOGUE AUDIO FROM SOUNDCARD can be connected to the left and/or right speaker.

Dual volume control

Left and right loudspeaker can have its own volume control. **Volume** characteristics for each potentiometer can be customized by using the graphs:

- Maximum and minimum values can be adjusted by moving sliders in the vertical bar (dB).
- Bargraph steps can be adjusted by moving sliders in the horizontal bar.
- Initial value of volume can be set by clicking in the graph.

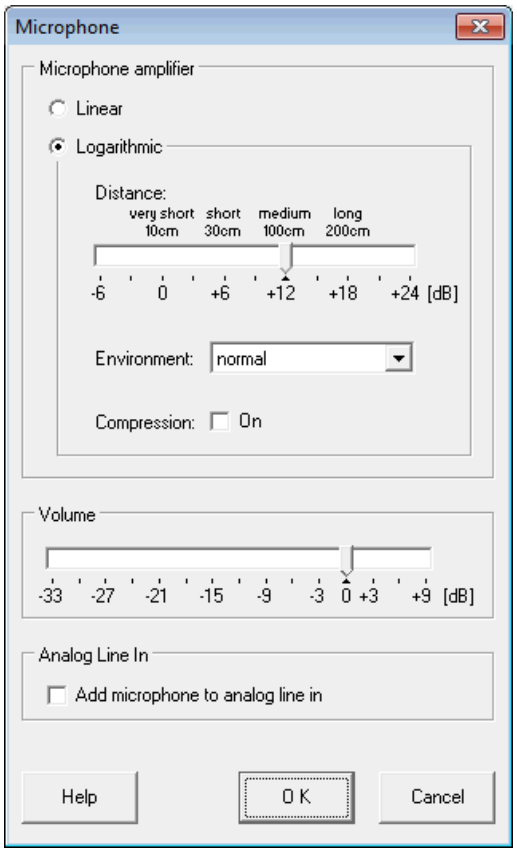
Central speaker



Central speaker is a low-frequency loudspeaker. It is enabled by default. It can be disabled by unchecking the ENABLED box.

It can be controlled by setting the **Cut-off frequency** value in Hz and the **Volume adjustment** value in dB.

Microphone


Microphone
Microphone amplifier
Linear
Logarithmic
Distance:
very short 10cm
short 30cm
medium 100cm
long 200cm
-6 0 +6 +12 +18 +24 [dB]
Environment:
normal
Compression:
On
Volume
-33 -27 -21 -15 -9 -3 0 +3 +9 [dB]
Analog Line In
Add microphone to analog line in
Help
OK
Cancel

Microphone amplifier can be set to LINEAR or LOGARITHMIC (default).

When it is set to logarithmic there can be defined additional settings:

Distance defines a distance of a person from the microphone. It is defined in decibels. The following approximate values can be used:

- 0 DB - VERY SHORT (~10 CM)
- +6 DB - SHORT (~30 CM)
- +12 DB - MEDIUM (~100 CM)
- +18 DB - LONG (~200 CM)

Environment indicates the environment where the BF22 is used. It can be set to:

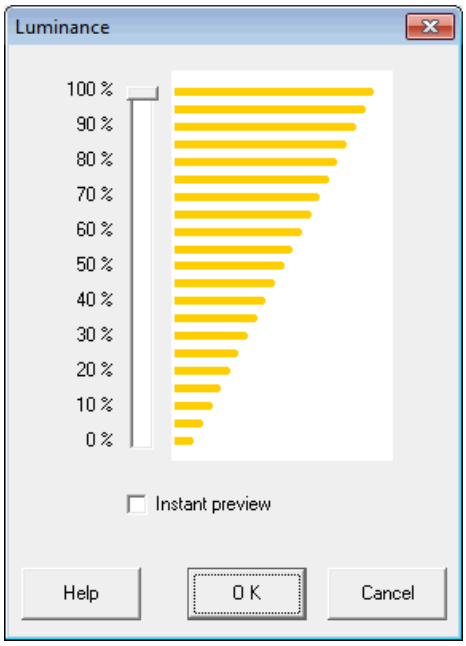
- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

Microphone **Volume** can be set using the track bar. If it is put more to the right, its gain is higher. If it is put more to left it is lower.

Microphone is always connected to USB audio CODECs. Additionally it can be connected to the **Analog Line in**. It is disabled by default.

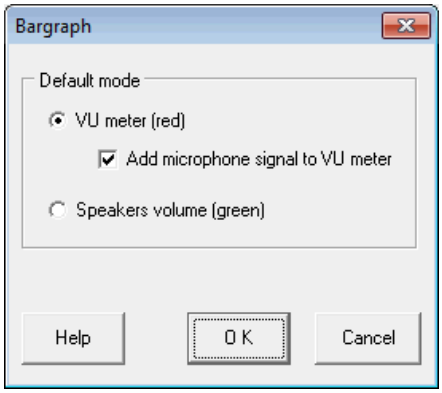
Luminance



Luminance can be set to a value form 0% to 100% in steps of 5%.

If the INSTANT PREVIEW box is checked, then the setting are shown immediately on the display as they are changed in the form.

Bargraph

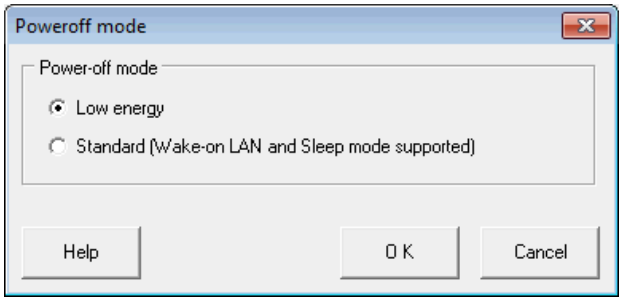


Default mode defines what is shown on the bargraph by default. It can show:

- state of VU METER (RED)
- SPEAKERS VOLUME (GREEN)

VU meter always shows signal on the speakers. Additionally to that it can also add MICROPHONE SIGNAL. It is added by default, if there is gooseneck microphone.

Power-off mode



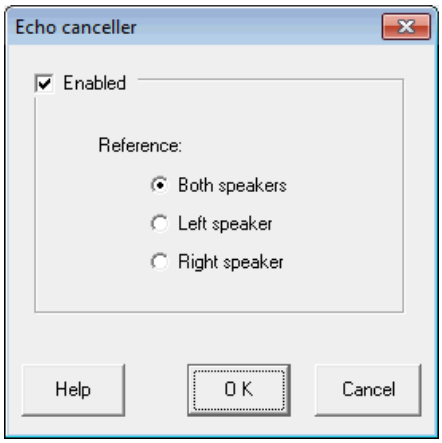
The **Power-off mode** can be:

- LOW ENERGY or
- STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED).

The LOW ENERGY mode turns everything off in power-off state. This is the default state.

If you want to enable wake-on LAN or use a Sleep mode, then the power-off mode must be set to the STANDARD (WAKE-ON LAN AND SLEEP MODE SUPPORTED) option.

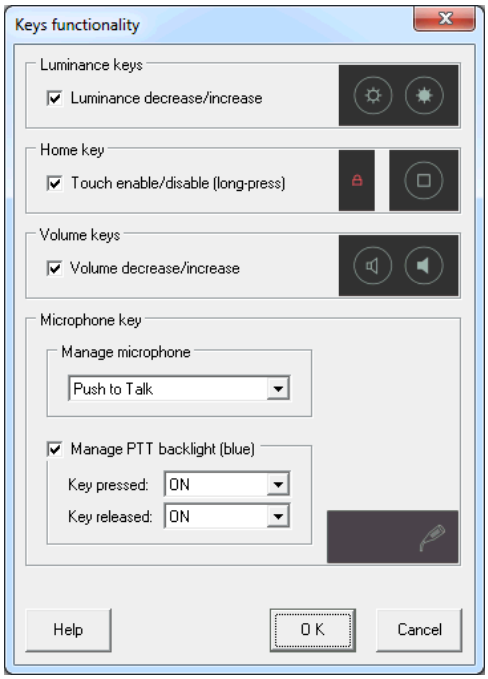
Echo canceller



If the BeFREE touchcomputer has an echo canceller in itself, it is enabled by default. It can be disabled by unchecking the ENABLED box.

Its **reference** can be set to BOTH STEREO SPEAKERS (default) or ONE of them.

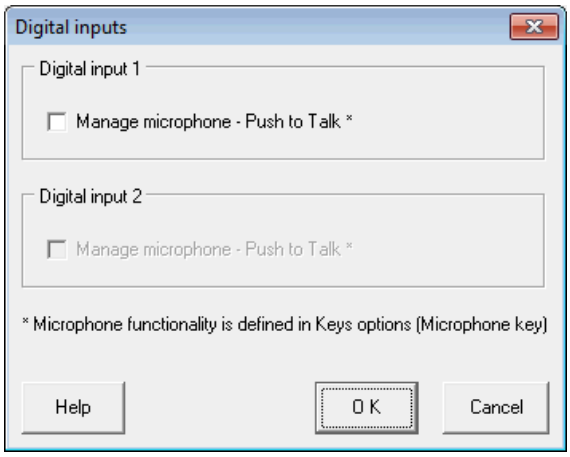
Keys options



BeFREE 22 keys can have defined special functions:

- **Luminance keys** - increase and decrease the luminance of LCD. It is shown on the bargraph in orange colour.
- **Home key** - toggle between disabled and enabled touch screen. The key must be hold down for approximately 1 second to disable the touch screen.
- **Volume keys** - increase and decrease volume of speakers. It is shown on the bargraph in green colour.
- **Microphone key** can have one of the following functionalities:
  - PUSH TO TALK - the microphone is muted; hold the key down to activate it.
  - PUSH TO MUTE - the microphone is active; hold the key down to mute it.
  - TOGGLE (INITIAL STATE IS TALK) - the microphone is active; press the key to toggle between muted and active microphone.
  - TOGGLE (INITIAL STATE IS MUTE) - the microphone is muted; press the key to toggle between muted and active microphone.
  - ALWAYS ON - the microphone is active. It can be managed using software.
  - ALWAYS OFF - the microphone is muted. It can be managed using software.
- Behaviour of the **PTT key backlight** (in blue colour) can be defined for pressed key and released key. It can be one of the following states:
  - ON
  - OFF
  - BLINKING

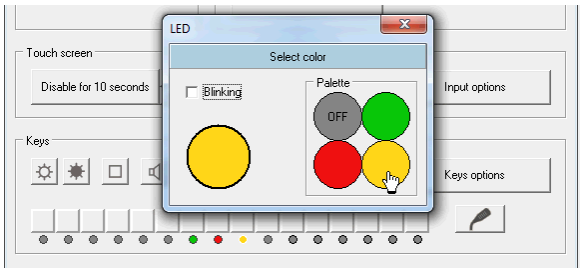
Digital inputs options



Digital input 1 can be used to MANAGE GOOSENECK MICROPHONE. Check the box to enable it. The managing functionality is the same as defined for the Microphone (PTT) key. So if you would like to change it, it has to be changed in the Keys options form.

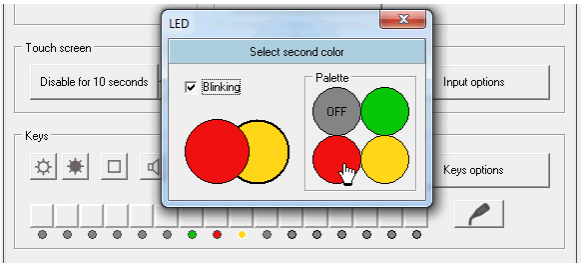
Line keys LEDs

Line keys are composed of 16 single keys. There is a LED on each of them. It can be off or lit in one of the 3 colours: green, red and orange.It can blink even blink or alternate 2 colours.



Click on a LED to define. Select a colour from the Palette by clicking on the colour.

If you would like to define a blinking colour, you should check the Blinking box first and then select the first and second colour from the Palette.



Programming BeFREE 07 (BF07)

BeFREE 07 (BF07) is a compact touchcomputer with integrated intercom and handset.

There are 2 options:

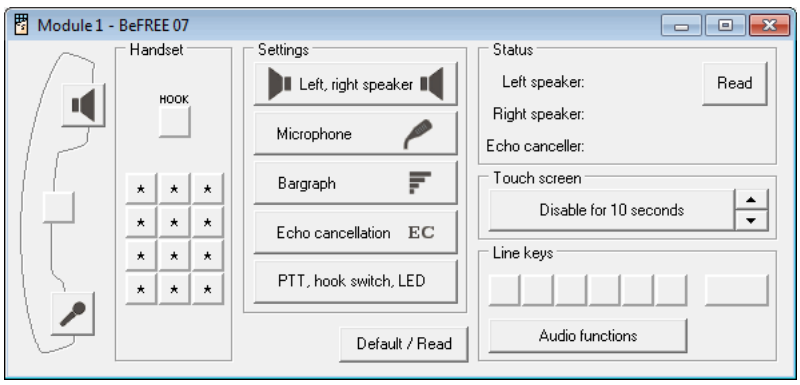
- standard BF07

- BF07 without a gooseneck microphone

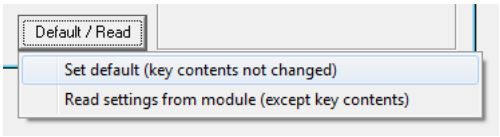
Additional options:

- built-in Echo canceller board
- Dial-pad under the handset

BF07 form



The echo cancellation board and the dial-pad are optional.

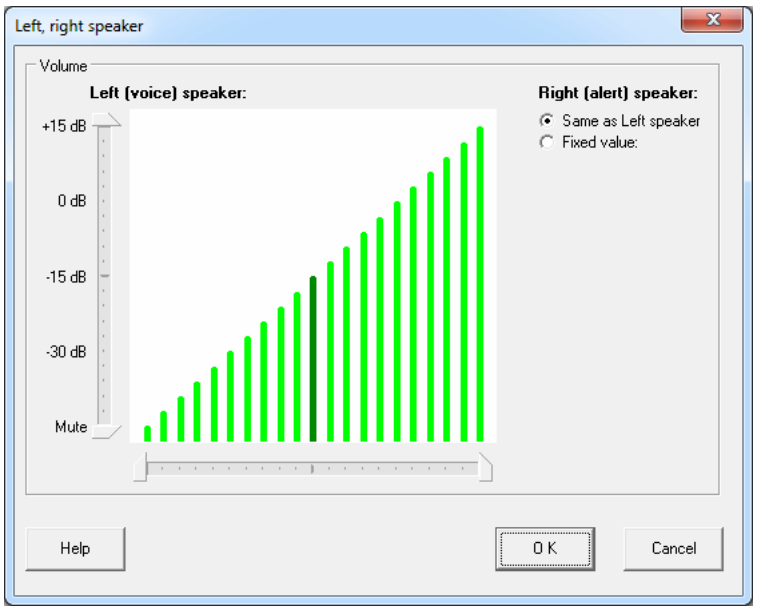


The **Default/Read** button:

- The **Set default** option sets all settings (Left, right speaker, Microphone, Bargraph, Echo cancellation, PTT, hook switch, LED, Line keys, Handset speaker and Handset microphone) except keys and hook switch contents to default values.
- The **Read settings from module** option reads the settings (Left, right speaker, Microphone, Bargraph, Echo cancellation, PTT, hook switch, LED, Line keys, Handset speaker and Handset microphone) from the connected BeFREE 07 module. It does not read keys and hook switch contents. It also does not read the backlight values of the microphone key.

Left, right speaker

There are stereo speakers in the BF07. Their volume can be adjusted using the knob.

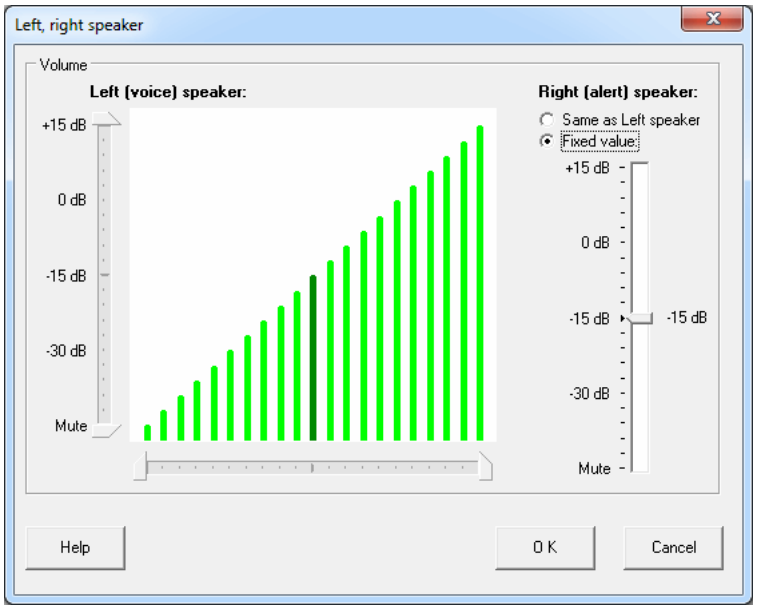


Volume control

Volume characteristics can be customized by using the graph:

- Maximum and minimum values can be adjusted by moving sliders in the vertical bar (dB).
- Bargraph steps can be adjusted by moving sliders in the horizontal bar.
- Initial value of volume can be set by clicking in the graph.

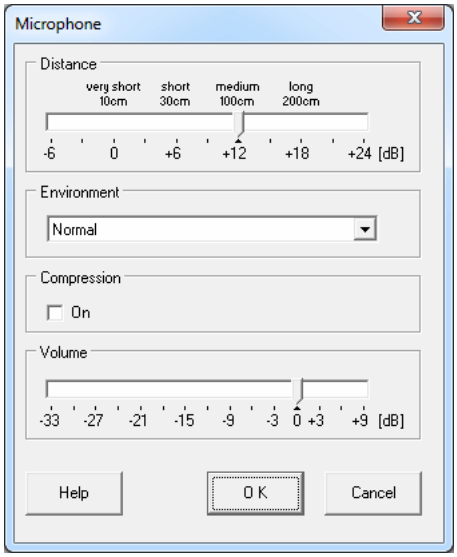
Dual volume control



All speakers can be controlled using the knob.

When using the right speaker for the alert sounds, then its volume can be set to a fixed value. Then the left (voice) speaker is controlled using the knob only and the right (alert) speaker is set to a fixed value that does not change when the knob is moved.

Microphone



Distance defines a distance of a person from the microphone. It is defined in decibels. The following approximate values can be used:

- 0 dB - VERY SHORT (~10 CM)
- +6 dB - SHORT (~30 CM)
- +12 dB - MEDIUM (~100 CM)
- +18 dB - LONG (~200 CM)

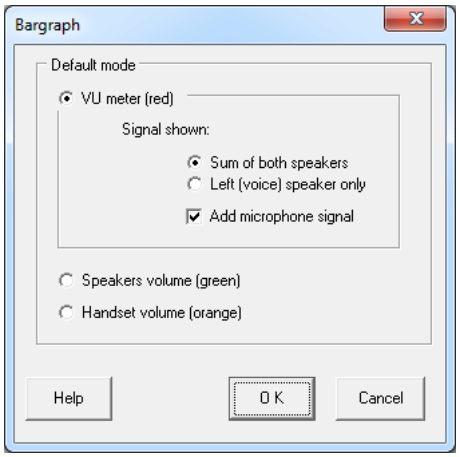
Environment indicates the environment where the BF07 is used. It can be set to:

- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

Microphone **Volume** can be set using the track bar. If it is put more to the right, its gain is higher. If it is put more to left it is lower.

Bargraph



Default mode defines what is shown on the bargraph by default. It can show:

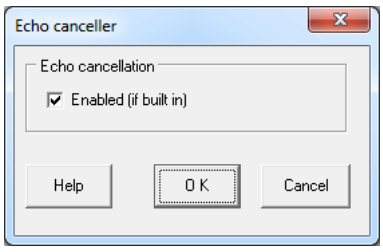
- state of VU METER (RED)
- SPEAKERS VOLUME (GREEN)
- HANDSET VOLUME (ORANGE)

VU meter can show signal of:

- ALL SPEAKERS (LEFT+RIGHT)
- LEFT (VOICE) SPEAKER ONLY - suitable for a case when the right speaker is used for the alert sounds.

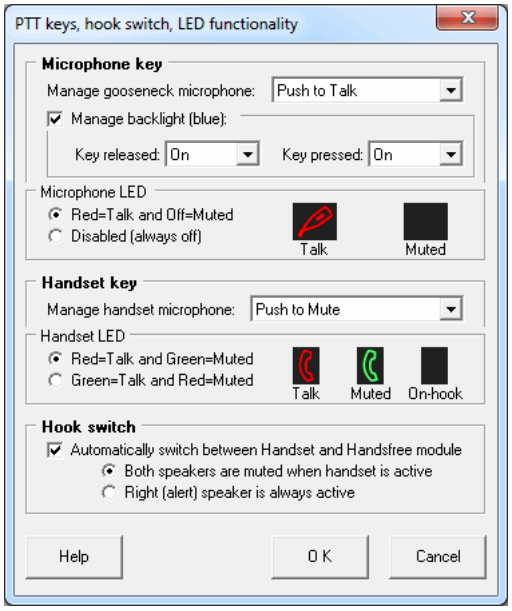
Additionally to the speakers signal it can show the MICROPHONE SIGNAL also.

Echo cancellation



If the echo canceller board is built-in, then it is enabled by default. Here it can be disabled.

PTT, hook switch, LED



The **Microphone key** can have one of the following functionalities:

- PUSH TO TALK - the microphone is muted; hold the key down to activate it (default).
- PUSH TO MUTE - the microphone is active; hold the key down to mute it.
- TOGGLE (INITIAL STATE IS TALK) - the microphone is active; press the key to toggle between muted and active microphone.
- TOGGLE (INITIAL STATE IS MUTE) - the microphone is muted; press the key to toggle between muted and active microphone.
- ALWAYS ON - the microphone is active. It can be managed using software.
- ALWAYS OFF - the microphone is muted. It can be managed using software.

Behaviour of the **Microphone key backlight** (in blue colour) can be defined for pressed key and released key. It can be one of the following states:

- ON
- OFF
- BLINKING

The **Microphone LED** shows the activity of the gooseneck microphone by default. When the microphone is muted, it is off. When the microphone is active, it lights in red colour. It can be disabled. That can useful in case the microphone is set to be always active, and you do not want that the led is on all the time.

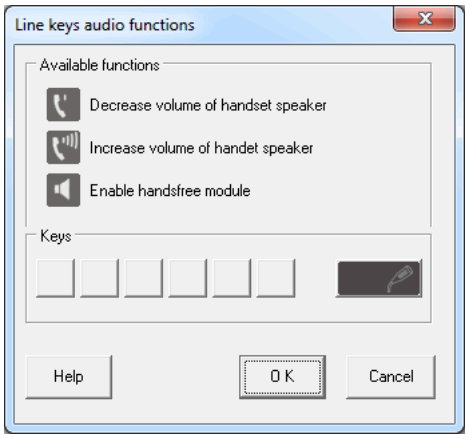
The Handset key can have one of the following functionalities:

- PUSH TO TALK - the microphone is muted; hold the key down to activate it.
- PUSH TO MUTE - the microphone is active; hold the key down to mute it (default).
- TOGGLE (INITIAL STATE IS TALK) - the microphone is active; press the key to toggle between muted and active microphone.
- TOGGLE (INITIAL STATE IS MUTE) - the microphone is muted; press the key to toggle between muted and active microphone.
- ALWAYS ON - the microphone is active. It can be managed using software.
- ALWAYS OFF - the microphone is muted. It can be managed using software.

The **Handset LED** shows activity of the handset microphone. When the handset is on-hook, the LED is off. There are two possibilities for Talk and Mute state.

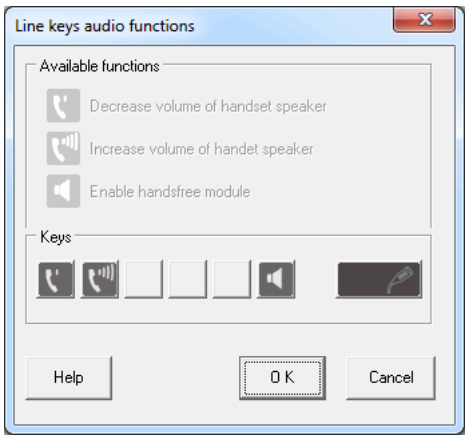
The **Hook switch** automatically switches between handsfree module and handset. This can be disabled by not ticking the **Automatically switch** checkbox. By default **Both speakers are muted** when the handset is picked up. If the **Right speaker** is used for alert sounds then it is more suitable that it is **always active**, so that the alert sounds are heard also when the handset is off-hook.

Line keys - audio functionality

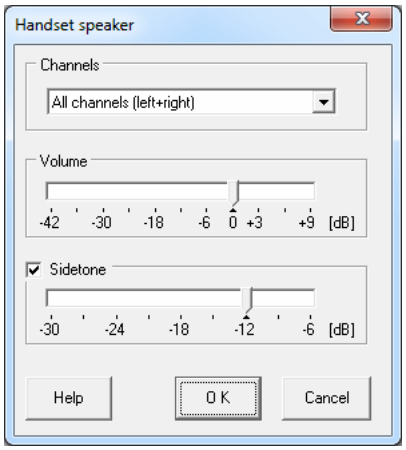


There are three available functionalities that can be defined for the line keys.

Click on a function and then on a key (or vice versa) to specify the function to the key.



Handset speaker



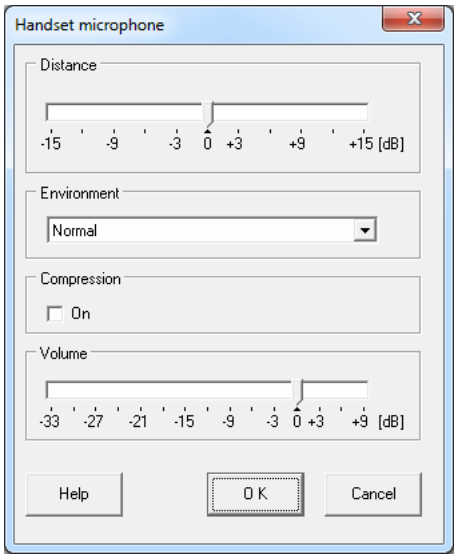
A handset mono speaker can play:

- ALL CHANNELS (LEFT+RIGHT),
- LEFT (VOICE) CHANNEL or
- RIGHT (ALERT) CHANNEL.

Handset **Volume** can be adjusted by moving the slide bar.

Sidetone attenuattion can be set by moving the slide bar. The sidetone can be switched off by not ticking the **Sidetone** checkbox.

Handset microphone



Distance is software adjustable microphone preamplifier. It can be adjusted using the slide bar.

Environment indicates the environment where the BeFREE 07 is used. It can be set to:

- QUIET
- NORMAL (not noisy)
- NOISY
- VERY NOISY
- EXTREMELY NOISY

Compression can be On or Off. When the Compression is switched ON, the volume will be automatically adjusted.

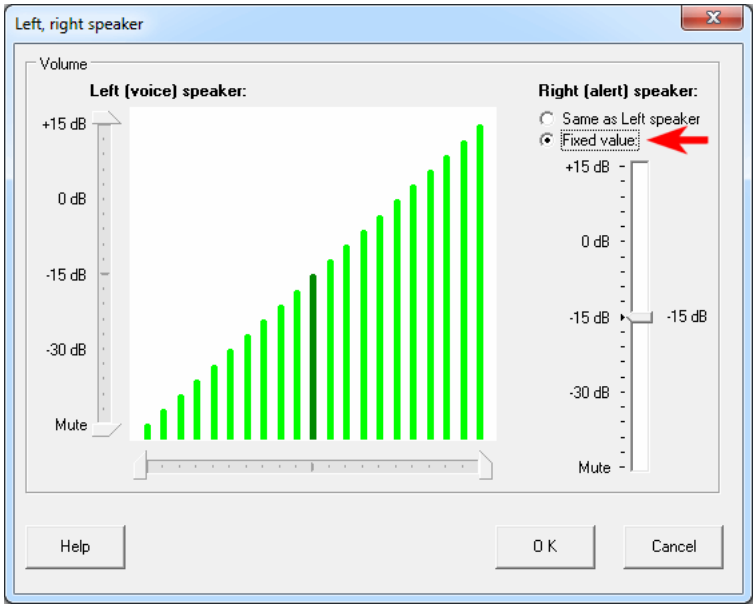
Microphone **Volume** can be set using the slide bar. If it is put more to right, its gain is higher. If it is put more to left it is lower.

Voice and alert sounds

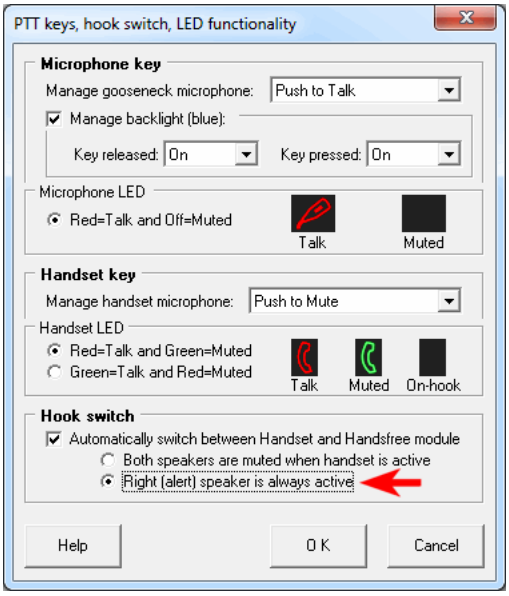
BeFREE 07 has stereo speakers - left and right speaker. Left channel can be used to playback voice sounds and the right channel to playback the alert sounds.

When the left channel is used for voice sounds and the right channel for alert sounds, it is suggested to use the following settings:

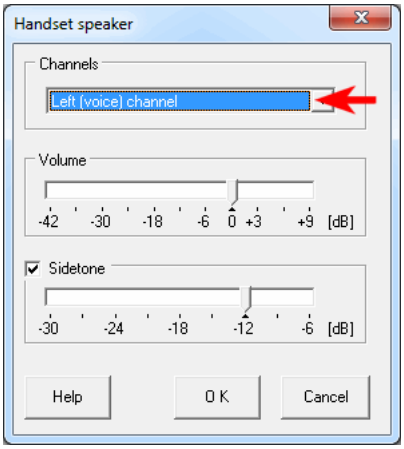
- **Left, right speaker:** Set volume of the **Right (alert) speaker** to the FIXED VALUE, so it cannot be changed (muted) using the knob.



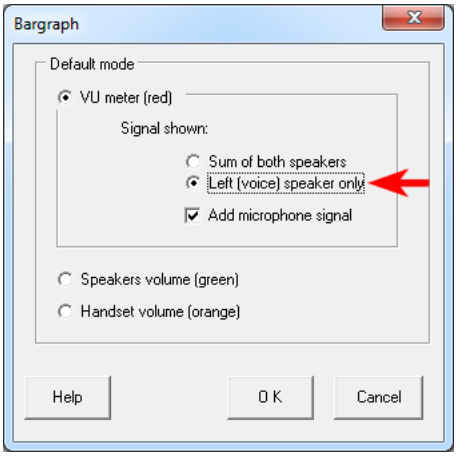
- **PTT, hook switch, LED:** Hook switch: THE RIGHT (ALERT) SPEAKER SHOULD BE ALWAYS ACTIVE - also when the handset is off-hook.



- **Handset speaker:** Select the LEFT (VOICE) CHANNEL to be playbacked at the handset speaker.



- **Bargraph:** Set that the LEFT (VOICE) SPEAKER SIGNAL is shown at VU meter only.



Advanced Techniques

Import text

To copy key contents from one module to another you can use the IMPORT TEXT feature.

Right click the module you want to import key contents to and select ***Import Text***

Use this when you have identical modules in different configurations.

Program the module once and ***export*** the key contents of this module.

Next, in new configurations import the saved contents.

When the imported contents file is of different dimensions then the module you are importing to, two things can happen:

- The imported file is larger than the current module: Keys outside the current module will be ignored and not imported
- The imported file is smaller than the current module: All keys are imported and the remaining keys are cleared.

Import always starts at the upper left corner.

If you want the import to start at a different position, see ***default contents***

A few contents files are supplied in the folder "Predefined", for instance "numpad.mtx" with a predefined numpad section.

Export text

Export key contents from a module you want to re-use in another configuration. Exported text can later be ***imported*** .

➢ ***to export:***

1 Program the keys of the module you want to export.

2 Right click the module you want to export and choose ***Export Text*** .

3 The format of the generated file is described ***here*** .

Default contents

You can import key contents starting from the selected key. Right click the desired key and choose ***Load default content***

Choose the file where the predefined contents is stored. This can be an earlier ***exported*** file.

To import less keys than the module contained that the export file was created from, you have to manually edit the file.

Open the file, with extension .mtx, in a text editor and delete the keys you don't want to import.

A description of the file format can be found ***here*** .

Text file format

Exported key contents is saved in the MID/FREE export text file format (filename.mtx). This format is used not only by exporting and importing key contents but also by reading the definition of fixed keys (e.g. QWERTY module).

Here is listed an example of exported text file:

```
A1/S/CT/A++++/C++++/F++--/~1~{F1}~~~!~1~~~
A2/S/CT/A++++/C++++/F++--/~2~{F2}~~~@~2~~~
A3/S/CT/A++++/C++++/F++--/~3~{F3}~~~#~3~~~
A4/S/CT/A++++/C++++/F++--/~4~{F4}~~~$~4~~~
A5/S/CT/A++++/C++++/F++--/~5~{F5}~~~%~5~~~
```

Every following line consists of key definition (describing the first line):

`A1` : coordinate of the key (left-hand upper key)

`S` : single key (`C` = Custom key, `Q` = Quadruple, etc.)

`CT` : content key (`S2` = Shift to layer 2 etc.)

`A++++` : autorepeat: key has in all layers autorepeat function

`C++++` : key click function: key has in all layers click function

`F++--` : fixed layers: layer 1 and 2 are fixed, 3 and 4 are programmable

`~1~{F1}~~~` **:** 4 contents, separated by ~

content 1 is letter `1`,

content 2 is key `F1`,

contents 3 and 4 are blank,

*** all contents are described in the US English layout and are translated when importing;

`~!~1~~~` **:** 4 labels, separated by ~

label 1 is letter `!`,

label 2 is letter `1`,

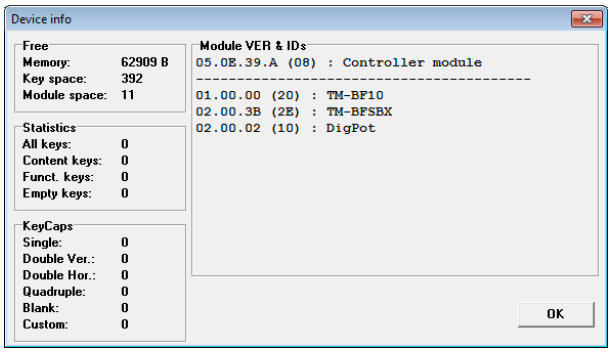
labels 3 and 4 are blank.

Load content from keyboard

Use LOAD CONTENT FROM KEYBOARD to get the definition from an already programmed configuration.

Device Info

At menu DEVICE > ***Info*** a summary is given about the status of the connected configuration.



Module VER & IDs shows The version of the Controller (Master module) and lists the different modules in the configuration.

The ID's and the names of the modules are listed.

Free: listed is:

- how much memory is still available, in Bytes.
- How many keys could still be added when adding another module.
- How many modules can still be added to the configuration.

Rollover

What is rollover

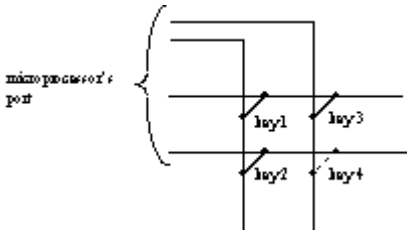
Sometimes, when three or more keys are pressed at the same time, the microprocessor in the Controller detects that also an extra -fourth- key was pressed. This is the so-called *Ghost Key*, and the situation when this happens is called **rollover.** Since the keyboard cannot know which specific key combination was used (could be any combination of 3 out of these 4 keys, or all 4) it reacts as if an illegal condition has occurred. The Controller warns the user with a beep and doesn't send a code to the system.

How does it occur

It has to do with the architecture of a keyboard.

The terminals of each key are connected to the microprocessor. When the key is pressed the processor detects that 2 signals are linked together.

On the following figure you can see the situation when 3 keys, which are connected to the same processor's port, are pressed at the same time. From the processor's point of view it is the same as if the 4th key was pressed as well (dashed line).



Because of the design of the keyboard, multiple keys are pressed when you press an extra-sized key (2 for double, and 4 keys for a quadruple)

The matrix modules are designed in such a way that no rollover will occur with an extra-sized key. The quadruple key can be placed anywhere on the keyboard.

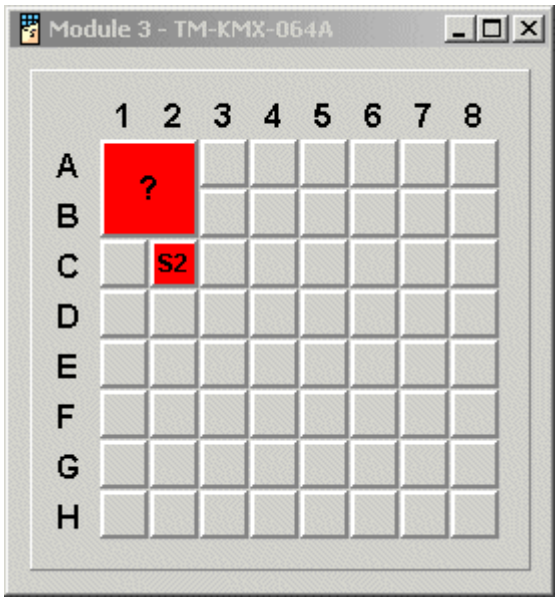
The only time when rollover can occur is when an extra-sized key is combined with another key, normally a *shift to layer* key.

ChangeMe will ***detect*** these situations and warns the user.

The data can only be downloaded to the keyboard when there is no rollover.

What to do when it occurs

An example of rollover:



ChangeMe shows that rollover occurs by changing the color of the keys involved. Also the problematic quadruple key is showing a question mark.

Key **A1** is a quadruple key with contents, **C2** is programmed as shift to layer 2.

Rollover will occur when both keys are pressed at the same time.

Three things can be done to solve the rollover:

- Move the quadruple key to another location
- Move the shift to layer key
- Change the size of the quadruple key.

FileTypes

List of Filetypes used by ChangeMe and their -short- description

.lay	Lay files contain all content and settings of the keyboard. It is the only file that ChangeMe needs to know the content of a configuration.
.cov	Cov files contain data needed for the Print labels utility (but not LabelMe!) – colors, text, and fonts of the key labels. It is only used for MID.
.bin	Bin file is a binary file downloaded to the keyboard – it is used only for batch downloading.
.txb	Txb file is an xml file that contains all content and settings of the keyboard. It is used for updating a configuration by Libero utility that runs on various operating systems.

Printing MID KB modules

The MID printing utility allows you to print labels in different colors, font types and sizes. The print can be used under the transparent foil of the short-travel key MID modules (KB-). If you want to use the labels under transparent keycaps, you have to use a pair of scissors.

There are 4 label fields in the key definition window (refer to ***Programming a keyboard***) where you can enter the text to be written on the keycaps. Only the non-blank fields are printed.

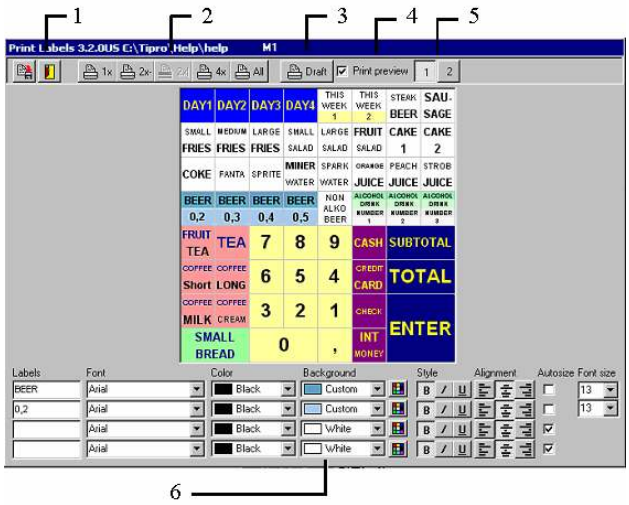
---

note: Print Labels utility is included in ChangeMe. You must enter debug mode by pressing Control+Backspace in main ChangeMe window. Then you can select Extended tools > Print labels for KB modules.

Print Labels utility prints the labels in MID key size. There is no pre-cut paper in this size.

The print can be used under the transparent cover of KB modules.

On the figure below you can see an example of a configured keyboard, the description of the significant parts follows:



1 With these two buttons you can save the entered changes to the key labels or exit this window and return back to the main window. The label properties are saved in a file with the extension .cov while the changes of the label texts are saved in the keyboard layout file and are therefore visible in the key definition window.

2 Key labels are printed separately, each size on a different page. With these 5 buttons you can print labels on Single/Double horizontal/Double vertical or Quadruple keycaps. If you want to print all pages at once you need to press the button All.

3 The Draft button starts printing of the complete keyboard layout on single page. Since all single, double and quadruple keycaps are visible on the same sheet, this feature is very useful for layout design and verification. The drawback of such printout is disproportional size of double and quadruple keycaps. Therefore it should not be used for final labels assembling.

4 The option Print preview enables you to see the printed layout before printing.

5 Only labels on one module can be seen at once. You can change the visible module with keys in the upper row.

6 Each key can have up to 4 different labels printed on the inserted paper. You can set different font type, text and background color, font style (bold, italic and underline), alignment and font size for each label separately. Font size can be set automatically to maximum (check the Autosize field) or manually. Font size cannot be bigger than the one that fits onto the key label. For the background color also a custom color could be selected.

To change the key label properties first click on the selected field (if the keycap size is bigger than single keycap you should click the upper left-handed corner) and then change the text, color and other text properties.

IMPORTANT: use the right mouse button to select multiple keys!

CHAPTER 7

Security

If you have a USB controller you can use security features for your keyboard.

In This Chapter

Introduction 226
Security wizard 227
Advanced techniques 227

Introduction

Security

Security enables the following features:

- the user can have a restricted keyboard access - some keys can be disabled for him/her
- some key combinations can be disabled - like `Control+Alt+Delete`

Security Levels

A configuration can have up to four Security Levels.

Security level tells when the key is enabled - from which security level on it is enabled:

- If a key is set to Security Level 0, it is always enabled - in all Security Levels
- If a key is set to Security Level 1, it is disabled in Security level 0 and enabled in other three
- If a key is set to Security Level 2, it is disabled in 0 and 1 and enabled in 2 and 3
- If a key is set to Security Level 3, it is disabled in all Levels except in Level 3

Note: Layer and Security Level are independent. They shouldn't be mixed. A key can have up to four Layers with different contents. A key can be set to one of four Security Levels.

See SECURITY > SET KEYS TO SECURITY LEVEL for details how to set a security level for a key.

Log on procedure

Press the LogOn key. Type a password.

Log off procedure

Press a key with programmed LogOff sequence.

Security wizard

There is an easy way to set up security features. This is by using the security wizard. It will assist you through the following steps:

1. Choose the module you will use to log on (Keyboard, iButton or KeyLock).
2. If a keyboard was chosen, you have to set the password length.
3. Define passwords for each security level.
4. If logging is implemented on keyboard module, you have to define log on and log off key.
5. Define keys that are enabled in each security level.

You can also define key combinations that are disabled in certain security level. Go to menu ***Security > Protected key combinations***

Advanced techniques

The easiest way to define security is using ***Security wizard*** .

Here are described some advanced techniques to set security options.

Key module

A. Set passwords

All passwords have to be of the same length.

See ***Edit passwords*** for details about password types and how to set it.

B. Set LogOn and LogOff key

The LogOn key is used to log on: keyboard expects the password to be entered after pressing the key.

The LogOff key is used to return to Security Level 0.

See also ***Security > Set LogOn key***

iButton

Security can be defined on iButton module. So a user can log on by inserting his iButton key and log off by removing it. Here it is described how to configure the iButton module.

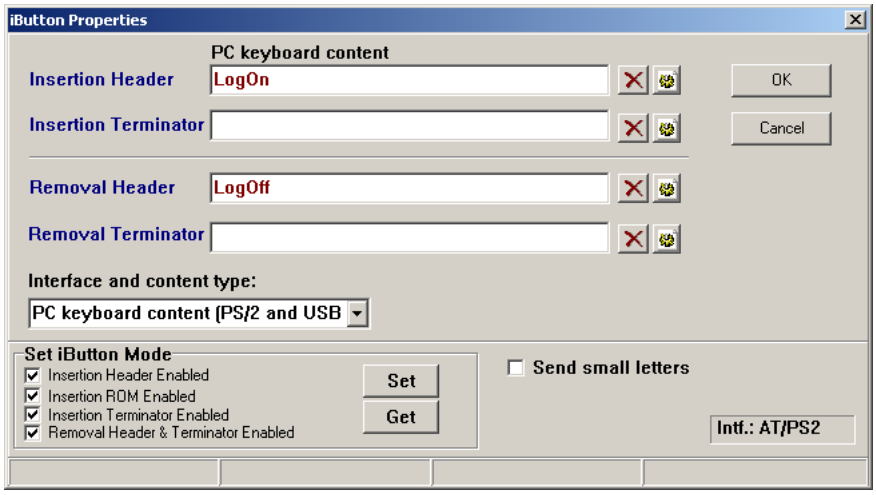
A. Configure iButton module

1 Open iButton window by clicking on iButton module.

2 Set LogOn sequence as INSERTATION HEADER by clicking on

3 Set LogOff sequence as REMOVAL HEADER by clicking on

Note: **Interface and content type** must be set to **PC keyboard content (PS/2 and USB)**



B. Add passwords

Each iButton key has its own code. This code has 12 digits in hexadecimal format. So the password type should be set to *ASCII* and password length to *12*. Then you can add passwords for each Security Level. See SECURITY > EDIT PASSWORDS for details.

KeyLock

KeyLock module can be used for log on. Here it is described how it has to be set.

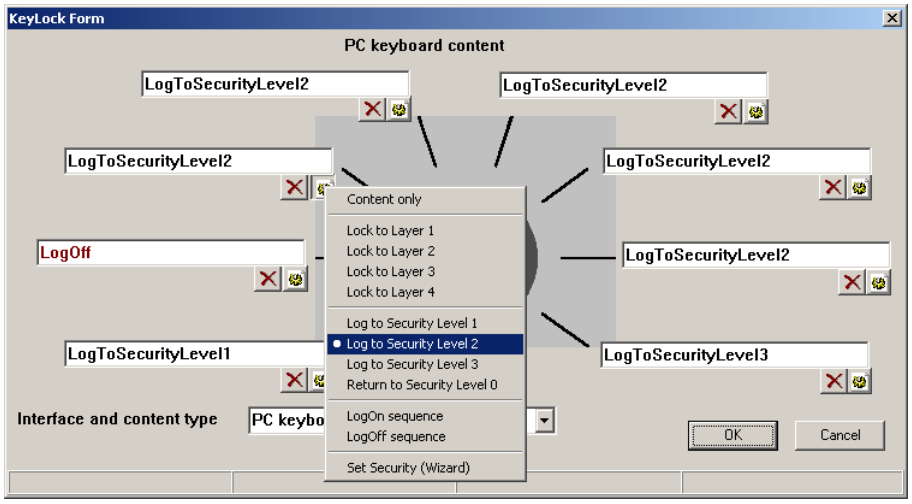
A. Set password type and length

1. Open **Edit passwords dialog** .
2. If password type/length was previously set, press **Change** to enable editboxes.
3. Set **Password type** to KEY PASSWORD.
4. Set **Password length** to 1.

B. Set Security Levels for individual KeyLock position

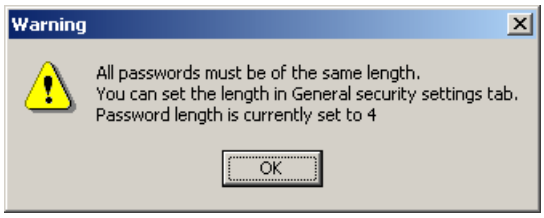
By clicking the button you can define Security level for each KeyLock position.

Note: **Interface and content type** must be set to **PC keyboard (PS/2 and USB)**.



RETURN TO SECURITY LEVEL 0 command is actually a **LogOff** sequence.

If the following Warning dialog appears, the password type and/or length have to be set. See above.



CHAPTER 8

Settings / Options

There are different settings that change the behavior of the program.

Some are visual, like settings for the **toolbutton's captions** and the **key preview**.

Others change the interpretation of input or the default settings.

The last category changes the way that ChangeMe communicates with the attached configuration

In This Chapter

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Input 231
Default 232
Communication 232

Visual

In menu OPTIONS > PREFERENCES > CHANGEME you can set the following visual options:

- show key preview
- show toolbutton's caption

Input

The first thing to set for the input is the correct layout of your keyboard. This can be done under OPTIONS > PREFERENCES > KEYBOARD SETTINGS .

Default

In ***Options > Preferences > Keyboard settings*** you can set how many layers can be programmed per key. The maximum is four.

You can choose the default click behavior in OPTIONS > PREFERENCES > ADVANCED KBD SETTINGS

Communication

Choose the programming interface -USB, PS/2 or RS232- in OPTIONS > COMMUNICATION PORT .

This is the port used for programming your configuration. The interface used when a key is pressed is set in the contents dialog (see ***interface***)

The default port, the one that is used to check for a connected FREE/FREE+ configuration when ChangeMe starts, can be set under: ***Options > Preferences > ChangeMe*** .

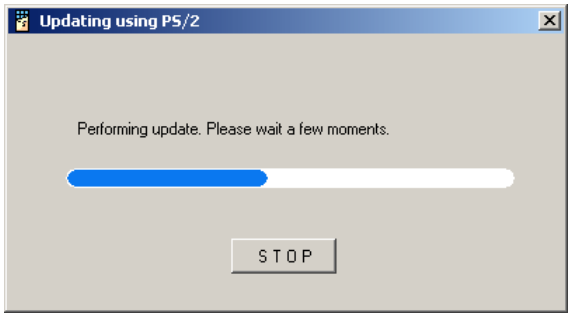
The baud rate with which the keyboard will send its RS 232 contents can be set in ***Options > Preferences > Keyboard settings*** . (This can be a different one than the programming interface)

In this menu you can also set the **interbyte delay**. This is the delay between each byte sent to the computer.

CHAPTER 9

Automatic update (using parameters)

Keyboard content can be updated automatically if ChangeMe is run with the path to the lay file as parameter (we recommend to put the name of the lay file between double quotes) and parameter -AUTO is added. The port used for updating can also be specified by adding parameter USB, PS2 or COMx (where x is the number of COM port). If no port is specified, default port from the ChangeMe.ini file is used.



Program call syntax:

```
[Program name] [Layout file name] [PORT] –AUTO
```

`Program name` is ChangeMe.exe with full path

`Layout file name` is the name of the file to be downloaded (LAY file)

`PORT` is optional and defines the communication port which is used for downloading. If not specified then the default port from the ChangeMe.ini is used. Can be: USB, PS2 or any of the COMx ports (COM1, COM2, ..., COM32)

Example:

```
C:\Tipro\MID4\ChangeMe.exe "D:\temp\test.lay" PS2
–AUTO
```

updates the keyboard with D:\temp\test.lay via PS/2 port and closes ChangeMe after download.

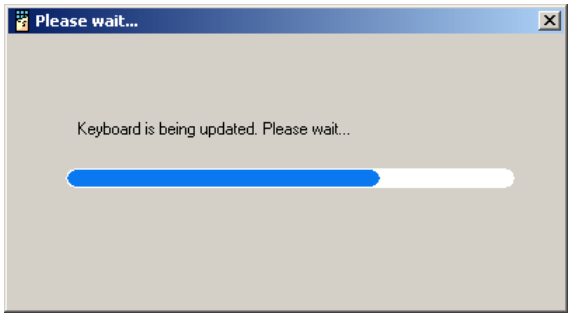
Additional parameters:

- `[MTX file name]`
  - An MTX file contains information about the content of one module. It is a text file and can be manually edited or created by an application. If an MTX file name is placed as parameter, then it is loaded into the first module in the configuration.

Note: There must specified also a LAY file name of current configuration beside the MTX file; e.g. `C:\Tipro\MID4\ChangeMe.exe "D:\temp\test2.lay" "D:\temp\kbd.mtx" USB –AUTO`

- `-NOINTERACTION`
  - No user interaction: The application cannot be closed during the update.
  - ChangeMe returns an error code. If it is 0, the update was successful; otherwise not.

- example: `C:\Tipro\MID4\ChangeMe.exe "D:\temp\test.lay" COM1 -AUTO -NOINTERACTION`



CHAPTER 10

How do I ?

Some specific tasks are explained here.

If you are looking for answers to some problems you might have, please check the ***FAQ*** section (Frequently Asked Questions)

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Click and autorepeat.....239
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Program a key to run an application 242

Program special contents

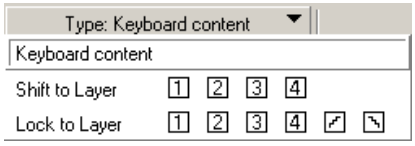
This chapter explains how to program some special contents like delay or beep and how to program a multiple layer key.

Multiple layer key

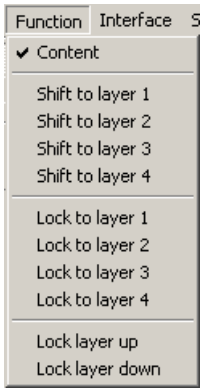
Each key can have up to 4 layers of content defined. Depending on which layer the keyboard is in (visible by the LED's L1-L4) different contents can be sent to the system.

To access different layers –at least – one key has to be programmed to change layers.

It can be done from the toolbar:



or from the FUNCTION menu:

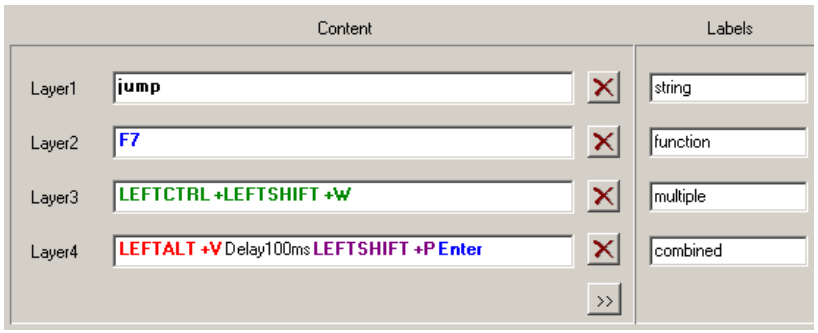


Shift to layer works like a shift, control or alt key; it has to be pressed together with a content key.

Lock to layer works like a Caps lock key; after pressing it, the keyboard stays in that layer till another lock to layer key is pressed.

Note: pressing a Shift to Layer key while being locked to a layer will also change the layer. In fact, by default the keyboard is locked to layer 1.

The different layers of the keys can now be accessed.



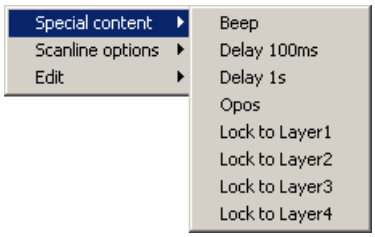
After programming, when this key is pressed it will send the string `jump` to the system.

Pressing a shift to layer 2 key together with this key will send `F7` to the system.

The same key pressed after a lock to layer 4 was pressed sends `Alt-V` and then, after a 100ms delay, `P` and `Enter`.

Beep and delay

You can program Beep and Delay by right-clicking in scanline. The context menu shows:



Now you can choose beep, short or long delay.

Note: if you want to send Beep for success or failure, the interface must be PC keyboard (AT/PS2 or USB)

Change national layout

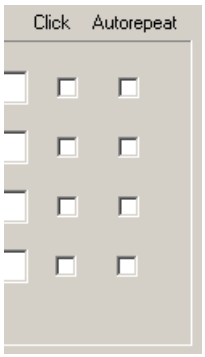
In menu: OPTIONS > PREFERENCES, KEYBOARD SETTINGS, you can change the layout of the keyboard.

Since the keyboard sends IBM codes, different contents can be sent when a different layout is selected.

example:

"y" pressed on a US keyboard will send "z" when pressed on a German keyboard.This means that a key programmed to send "y" with US layout will actually send "z" when the layout setting is changed to German.

Click and autorepeat



When click is selected the key will give a clicking sound when pressed.

The default setting can be changed in menu:
OPTIONS > PREFERENCES, ADVANCED KBD SETTINGS.

Autorepeat defines if the key will repeat to send its contents when the key is pressed for a longer time.

Program through COM port

When you want to communicate with Tipro modules through RS232 instead of PS/2, you have to change the following settings:

In menu: OPTIONS > COMMUNICATIONS PORT select the port your cable is connected to.

The statusbar will show in the lower right corner what interface is currently used. (You can also double click here to change the interface)

Tip: When you have problems using ChangeMe on a notebook, connect the FREE/FREE+ configuration to the COM port. You can set the default port in the ***preferences*** to your COM port.

In ChangeMe versions 4.0.x do the following: Run ChangeMe with commandline option –com. This way autodetection will look only at the COM port, not at the PS/2 port. START > RUN, type: "C:\Tipro\MID40\ChangeMe.exe –com" (or change the path when you installed in a different directory)

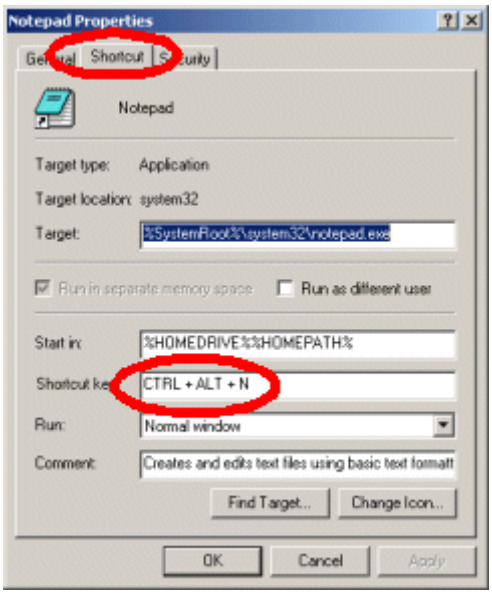
Note: Keep PS/2 connected, this is needed for the power supply.

Program shortcut keys

1 Press right mouse button on icon of the program that you want to make shortcut key for

2 Choose Properties

3 Under Shortcut tab, there is a field called Shortcut key (see picture), click it and press the desired combination of keys (`Ctrl+Alt+N` for Notepad in our example)



4 Press **OK** button

5 Start **ChangeMe** utility

6 Your programmable keyboard should be detected automatically

7 Press the button that represents the key

8 Key content requester will show up

9 Set the content of layer1 to the same key combination you set before (see picture)

10 Press **OK**

11 Press **Update** to update the keyboard with new content

12 Close ChangeMe and try to press the key. Notepad should start.

Program a key to run an application

There are two ways to accomplish this.

The first option is to use shortcuts. These can be Windows shortcuts, like `Win+E` to open explorer, or defined by you. See ***program shortcut keys***

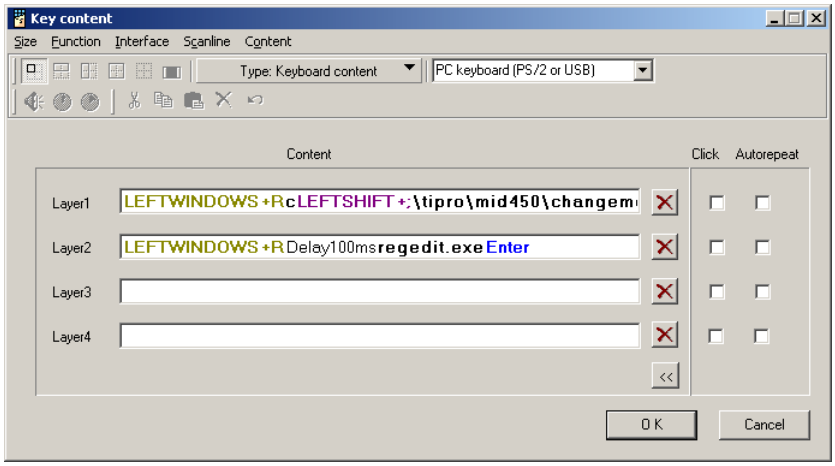
The other option is to use the Windows shortcut for running programs (`Win+R`) and then supply the path to your executable, followed by `enter`.

Note: Sometimes you need to put a ***delay*** between `Win+R` and the path.

Example:

To start ChangeMe with a key:

Press the `Win` (GUI) key +R followed by `C:\Tipro\MID450\ChangeMe.exe` and end with `Enter`.



CHAPTER 11

FAQ

In This Chapter

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FREE/FREE+ and Operating Systems

You can **program** keyboards in any Windows system (XP, Vista, 7), but you can **use** them also in other systems (Unix, Linux, OS/2, Mac OS...) that support IBM standard keyboards.

Where can I get pre-cut paper to print labels on?

Pre-cut papers for FREE and MID are available in different sizes and different colors.

Please contact your distributor for more information.

Is it possible to map ASCII values to keys?

Yes, just press the ALT key and then ASCII value of the desired character on the numeric keypad.
Example: We want to assign a key to a temperature sign (°). Select the key you want to assign in ChangeMe, press ALT+2+4+8.

Note: You need to press numbers on Numeric keyboard! ChangeMe will recognize the keys you pressed and the operating system will translate the sequence to the temperature sign.

Is it possible to have Caps Lock 'OFF' on Tipro keyboard and 'ON' on the secondary keyboard?

No, because the keyboard turns LED indicators only on when the PC requests it. The **Caps Lock** indicator is a matter of the PC and the keyboard doesn't "know" whether it is 'ON' or 'OFF'. Let's see what happens if you press the sequence: A, CapsLock, A.

When you press the key 'A', the PC gets a code and prints 'a'.

When you then press Caps Lock, PC gets another code, remembers that Caps Lock is 'ON' and sends request to the keyboard to turn the LED 'ON'.

If you press 'A' again, the PC gets the same code as before (as in case 1), but because PC knows that Caps Lock is 'ON', it prints 'A'.

Can I change the functionality of the keyboard on line during work?

No, this functionality was not incorporated because:

Changing the configuration means also changing the labels. You probably don't want to do that every day.

It is easier to change the application instead of the keyboard. Example from the restaurant: on Monday Menu1=beef, on Tuesday Menu1=chicken... Instead of changing the keyboard, it is more appropriate to define a key 'Menu1', which is in software translated into the daily menu.

What is the lifetime of MID or FREE module?

Mean Time Before Failure (MTBF) is 80.000 hours (More than 9 years if you use it every day, 24 hours a day).

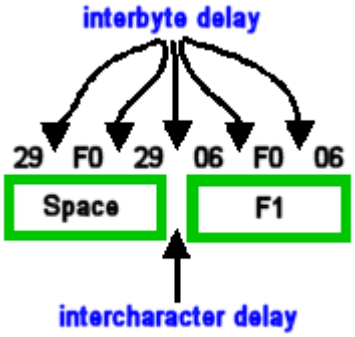
The MCR delivers the data to the host to fast. Is it possible to put in a "Character delay"?

You can set the speed of sending data toward system in the ***Options > Preferences > Keyboard settings*** , **Interbyte delay** field. It is set to minimum by default (1ms). You can increase this value to up to 8 ms.

You can also add an intercharacter delay as a part of MCR's headers and terminators. You can define that first track one is sent, then the keyboard waits for 100ms and sends other codes (intercharacter delay could be 100ms or 1s or a sequence of these periods e.g. 1s + 100ms + 100ms ... see also ***delay***

example:

If one key has a content of `<Space><F1>` the following codes are sent:



Can I program contents and lock to layer in one key?

If you have PS/2 or RS232 controller:

No, with a key this is not possible. A key is either a contents key or a shift / lock to layer key.

You can do this with a Keylock. There you can enter contents and shift / lock to layer at the same time.

If you have USB controller:

It is possible.You can program a contents and lock to layer in one key. Lock to layer can be added by right clicking the scanline and selecting SPECIAL CONTENT > LOCK TO LAYER.

See ***Scanline's context menu*** for details.

CHAPTER 12

Troubleshooting

In This Chapter

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I can't program a Tipro keyboard (PS/2 interface) with a laptop

ChangeMe doesn't work perfectly on many portable computers. The reason is the following:

On a desktop computer, The MID or FREE keyboard is connected directly to the PC and the standard IBM keyboard is connected to the MID / FREE. The keyboards are connected in serial (everything works fine this way). In case of a laptop, the keyboards are connected in parallel. This means that both keyboards (laptop's and MID/FREE) are connected directly to the PC and ChangeMe might communicate with both of them.

A problem might occur when ChangeMe wants to get information from the MID/FREE keyboard and both keyboards answer. If the internal one has the priority, then it will answer with 'I don't understand', because we need to send some non-standard commands towards the MID/FREE keyboard.

Solution:

- Connect the keyboard to a COM port to program. See ***program through COM port***
- Program the keyboard on another computer.

You can still use the keyboard on the laptop

Error when updating

Update through PS/2 requires some specific circumstances.

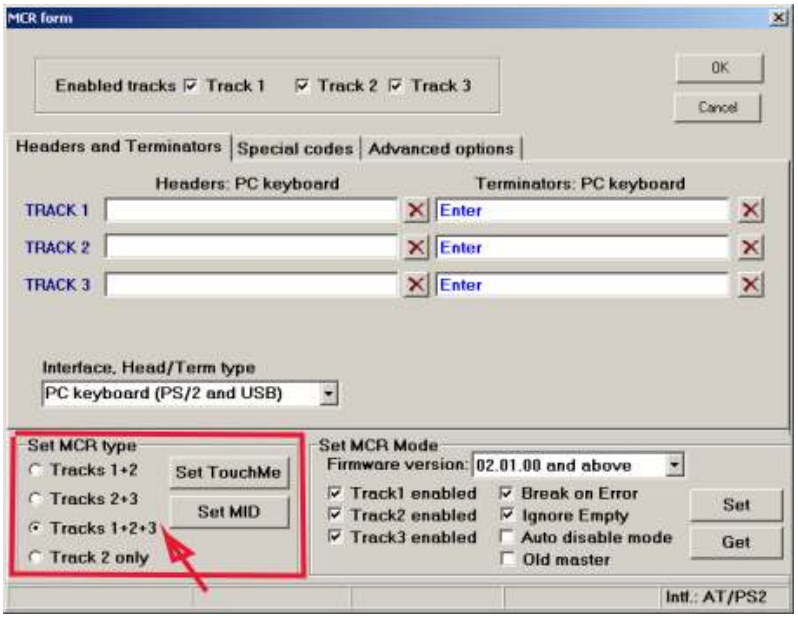
Please make sure that:

- Update is performed on a desktop (not notebook) computer
- Tipro keyboard is not connected directly to the computer via the Tipro PS/2 cable. Update can not work if a KVM switch or some other device like a scanner is connected between the keyboard and the computer
- Applications that disturb the update process are not running. We strongly suggest closing all internet browsers, movie players or any other application that is using Flash or a lot of processor resources.

ChangeMe can detect the known applications that maybe causing the problems and can close them for you. Keep in mind that no data will be saved if ChangeMe closes these applications.

I have a RBA module but it is recognized as RAA

1. Start ChangeMe
2. Press (simultaneously) SHIFT+ALT+BACKSPACE to enter the DEBUG mode (this mode is used for troubleshooting and demonstration).
3. Open the MCR module. You get the following picture



4. In the bottom left side corner, select tracks 2+3 and press **Set TouchMe** for FREE/FREE+ or **Set MID** for MID configuration.
5. In the next Autodetect, the module will be recognized as RBA module.

Verify reports an error

Verify means Load content from keyboard & Compare. There could be a problem with reading the contents on your computer. We advise you to do the following:

Press SHIFT+ALT+BACKSPACE. Menu DEBUG should appear.

Choose SET ALL AT/PS2. The keyboard is filled with numbers 1..128

Update (don't Verify) and check whether all the keys are programmed

If everything is OK, update the keyboard with your file.

If something is still not o.k. please contact our ***technical support***

CHAPTER 13

Copyrights and technical support

In this chapter you can find the copyrights and information about technical support.

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No liability for consequential damages 254
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Technical support 255

Copyright

ChangeMe Copyright by Tipro d.o.o.

FREE™ is a trademark of Tipro d.o.o.

FREE+™ is a trademark of Tipro d.o.o.

MIDWIN Copyright by Tipro d.o.o.

MID™ is a trademark of Tipro d.o.o.,

All rights reserved

IBM® is a registered trademark of International Business Machines Corporation.

Windows® is a registered trademark of Microsoft® Corporation

iButton® is a registered trade mark of Dallas Semiconductor

Software distribution

The software that is distributed with **FREE**, **FREE+** and **BeFREE** is free software and may be used by any number of systems.

Modification of the programs or their resources is strictly forbidden. Any modification of any component of FREE/FREE+/BeFREE software is a breach of intellectual property laws in most countries and will be pursued vigorously to the full extent of the law.

No liability for consequential damages

Tipro and its suppliers shall be in no event liable for any damage (including without limitation, special, incidental, consequential, or indirect damages for personal injury, loss of business profits, loss of business information, or any other pecuniary loss) arising out of the use of or inability to use this product.

WIN Keys

The key marked is pre-programmed to emulate the Microsoft® Windows® Logo Key found on many standard 'QWERTY' devices that is used to launch the start menu in the Microsoft® Windows® Operating Systems normally marked with the copyright Microsoft® logo. We no longer apply this logo to our keyboards as part of the mandatory approval demands the fixed location of this key and it is felt that this is contrary to our policy of programmability.

Technical support

Your first port of call for technical support for FREE/FREE+ and ChangeMe is this manual, the helpfile and the Troubleshoot on the Internet. The address of the Tipro Technical support web site is:

http://www.tipro.net/support/

If these sources do not give satisfactory answers, you may contact our technical support by Email or Fax. We endeavor to answer questions within 48 hours (except on holidays, weekends and working free days).

When you have a question about ChangeMe, please also include the following:

- ***Version*** of ChangeMe
- ***Device > Info***
- Operating system that you use
- Kind of computer (desktop/laptop)

Contact Tipro

Via	At
e-mail	***support@tipro.si*** mailto:support@tipro.si
Fax	+386 1/78 88 299
Mail	Tipro d.o.o. Ljubljanska cesta 64 SI-1290 Grosuplje Slovenia

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