

Business Recorder

Manual

V2.1

VC1554



vidicode

Vidicode

Blauw-roodlaan 140
2718 SK Zoetermeer
The Netherlands

Phone

+31(0)79 3617181

Fax

+31(0)79 3618092

Sales

+31(0)79 3471010

Support

+31(0)79 3471005

Email

vidicode@vidicode.nl

Internet

www.vidicode.nl

Care and maintenance

	<p>Keep the Business Recorder dry. If it gets wet, wipe it dry immediately with a soft, clean cloth. Liquids might contain minerals that corrode the electronic circuits.</p>
	<p>Use and store the Business Recorder only in temperature conditions between 0 and 40 degrees Celsius. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.</p>
	<p>Keep the Business Recorder away from excessive dust and dirt.</p>
	<p>Do not use aggressive chemicals, cleaning solvents or strong detergents to clean the Business Recorder.</p>

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1 The user interface

Vidicode uses some basic principles for the user interface of all products. The keys are grouped by function and in this paragraph, we will show you how that works.



- 1 Soft keys
- 2 Display
- 3 Function keys
- 4 Speaker L+R
- 5 Numeric keys
- 6 Card slot
- 7 CD-drive (optional)
- 8 Recorder keys
- 9 Recording
- 10 Volume controls

1.1 Recorder-keys



The recorder keys can also be found on the remote control.

1.1.1 About the recorder keys

During recording and playback the recorder keys have the standard recorder key functions.

Otherwise the and keys can be used to scroll through a selection of recordings, numbers in a number list or through a settings menu. The key will always exit the current operation. When editing text they function as explained in the table of the alpha-numerical functions below.

1.2 Function keys

The recorder has so called function keys to start a certain function:



select dictation mode (also found on remote)



select conference mode (also found on remote)



add selected recording to playlist or bring up playlist



bring up recorder configuration menu's



add selected recording to USB list or bring up USB list



add selected recording to CD list or bring up CD list



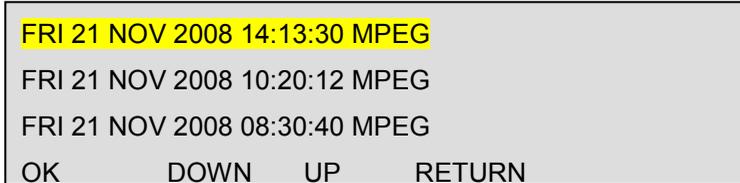
bring up the contents of the CD in the CD drive



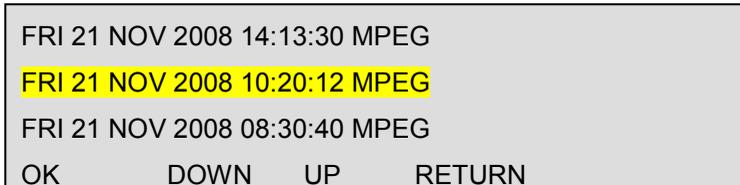
delete a selected item

1.3 Soft keys

When you are working with the recorder, the display will show you what your options are. You will read these options above the so called soft keys . When you press the key you select the option.



In the example below there is a menu for browsing recordings, the options are OK, DOWN, UP and RETURN. When you press the soft key labelled DOWN once, you go to the next recording:



1.4 Numeric keys

The **numeric keys** allow you to enter data into the recorder GSM style. This might be an e-mail address, a configuration item such as an IP

address etc. The exception here is the “search key” , that backs up as an extra function key.



1.5 The volume controls

The volume controls (numbered 10 in the picture) are as with any normal audio device. You can also find the volume controls on the remote control unit.

1.6 The remote control

On the remote control you find an appropriate sub set of the keys on the main keyboard. The remote control is meant to control the Business Recorder during meetings or interviews.



2 Introduction of the Business Recorder

The Business Recorder is a high capacity audio recording system for the business environment. It was designed around the following ideas:

- Recording of business meetings as the primary function.
- Recording dictations as the secondary function.
- Buttons preset for the two operating modes.
- Ease of use for the challenging objective to record many speakers around a conference table.
- High recording quality.
- Compatible with professional microphones and microphone systems.
- High storage capacity.
- Perfect integration with today's technology of MPEG players, USB sticks, PC's and internet.

In this chapter explains the general properties of the Business Recorder. Chapter 2 is dedicated to installation and configuration. Chapter 3 will teach you how to work with the machine while chapter 4 will introduce some special functions and services to you.

2.1 High recording quality

The Business Recorder is designed to make the recording of meetings simple. In general, there are few meetings where everyone speaks into a microphone. Therefore the Business recorder was designed to capture low volume voice audio. Put one or two microphones on the table and have the immediate result of a recording where every word spoken can be clearly understood.

In addition, when you are dealing with a large conference hall with its own professional microphone system already in place, the Business Recorder is also the right choice. The input channels feature a large flexibility. They can be configured to record the output of the conference audio system or a variety of other audio sources.

The input ports on the Business Recorder have many similar features as professional studio recording systems. They feature built in microphone pre-amplifiers with 2,5V and 48 V so called Phantom Power, both of which can be selected. This allows to connect almost every type of microphone.

2.2 Up to date technology

The Business Recorder is equipped with the following features.

- An internal hard disk allows to store hundreds of hours of high quality audio. There is no need to load the recorder with a recording medium.
- Fast mathematical processors to perform real time compression of stereo inputs into MPEG digital audio.
- The Business Recorder employs four methods for distribution of recordings at low cost.
- The internal microphone allows for easy use as a dictation machine and is of such quality that in a small meeting (2 persons at the table) an external microphone is not necessary.

2.2.1 Distribution of recordings via the integrated web server

The Business Recorder can be accessed by the PC's in your network using the internet web browser. The users can search for recordings and then play the recording using their standard media player or copy the recordings to their own hard disk. This process will not interfere with recordings being made and therefore the Business Recorder can be seen as the server for the recordings.

2.2.2 Distribution via USB

The Business Recorder can distribute the recording instantly to persons who have attended the meeting. The recorder can copy the recording to a USB stick or MPEG player. When the recording is copied to an MPEG player, it can be listened to instantly.

2.2.3 Distribution via e-mail

Although a recording can be forwarded by e-mail from the PC, there is also the option to send the recording immediately from the recorder.

2.2.4 Distribution by CD

The Business Recorder is available with or without integrated CD recorder. The advantage of the CD recorder is that copies can be distributed on the very inexpensive medium of the recordable CD. MPEG CD's can be played on all PC's and DVD players.

2.3 Well connected

The Business Recorder has a wide range of input- and output channels.

2.3.1 The Microphone ports

The Business Recorder has three microphone ports, two main ports called channel A and B and one auxiliary input called headset microphone.

The **main microphone ports** have been designed such that they offer the highest possible flexibility. Most quality microphones and microphone systems can be used directly with the Business Recorder. The microphone pre-amplifiers and the sources of microphone power are an integral part of the recorder, but they can be disabled. The flexibility of the two main microphone ports allows you to solve almost any recording situation.

The Business Recorder can also be used as a dictation machine. The **auxiliary microphone port** is meant for that purpose and there is no need to disconnect the main microphones that quite possibly are in a fixed installation anyhow. The recorder can be reconfigured as a dictation machine with only one key press.

2.3.2 Audio output

Another function of the recorder is playback of the recordings. The recorder has three ways to reproduce the recording:

The internal loudspeakers

The loudspeakers are small and their purpose is mainly to listen to a recording to verify that the recorder is configured well. In practice, it provides sufficient quality to listen to most recordings, but does not replace a good loudspeaker system.

External analogue loudspeakers or amplifiers

All common types of multi media loudspeakers or amplifiers with loudspeakers can be used with the Business Recorder.

External loudspeakers with SPDIF digital input

Many loudspeakers and surround audio amplifiers feature digital inputs. The advantage is the lossless transfer of the signal to the playback device. The Business Recorder has SPDIF digital output and is compatible with these systems.

2.4 Easy configuration

The Business Recorder has several modes of operation and settings. This means that some configuration will be required before you can use it. We have carefully tried to keep configuration minimal. All hardware features can be controlled by software. The recorder offers two systems of configuration:

2.4.1 Configuration through the keyboard

The recorder features a tree like configuration menu structure that will require little instruction for the user.

2.4.2 Web based configuration

Web based configuration is an alternative to keyboard configuration. For many of us it is easier to use. In addition, the user management and authorisation is through web pages. Some configuration from the keyboard might be needed before you can use the web-based configuration because you will have to enable the recorder on your network (e.g. IP-address setting).

2.5 Special features

The Business Recorder has some special features. We introduce the most common of these features:

2.5.1 Remote control

All Business Recorders are supplied with a remote control for the basic functions to start and stop recording or playback, control the volume and place tags.

2.5.2 Placing numbered tags within recordings

This technique is for persons who plan to type out the minutes of a meeting. While recording they can add tags to the audio data to remember the sections that are particularly important to listen to.

2.5.3 Encryption using the Crypto Card

In the front of the recorder, you will find a card slot for Crypto cards. The CryptoCard is used to encrypt the recording. Playback is only possible when a playback card is placed in the recorder or in a card reader on a PC. Encryption of recordings is a powerful way to protect privacy and to prevent unauthorised reproduction.

3 Getting started

3.1 Unpacking

The box contains:

- The recorder.
- The remote control.
- This manual.
- A power supply.

Items that are not supplied and that you may need are:

- Microphones suitable for your application.
- Cables to connect these microphones with the Business Recorder.
- External loudspeakers or an amplifier with loudspeakers.
- An Ethernet cable.

Other optional items that are not supplied but that you may now or in the future use together with your Business Recorder are:

- USB memory sticks or USB MPEG players.
- Recordable CD's.
- Business Recorder Crypto Cards.
- A foot pedal to control playback while typing.
- Business Recorder Access Software.

3.2 Hardware set up

In this stage, we show you how to make the connections to the back panel of the recorder.



The ports are:

No.	Description
1	Power
2	RS232
3	Ethernet
4	2 x USB
5	SPDIF optical output
6	Stereo loudspeakers output
7	Mono microphone input
8	Main microphone- or line input port A (left channel or mono)
9	Main microphone- or line input port B (right channel)

3.2.1 Power supply

Only use the power adapter supplied. Other power adapters within the range of power inputs specified can be used. However, misinterpretation of the specified power requirements may result in failure or malfunction, which is at the risk of the user. Connect the power supply to the power port at the back of the recorder and to a mains outlet.

Once powered up, the recorder will boot and go through its test sequences. This will take about 30 seconds.

3.2.2 Microphones

Warning: Do not connect the microphones before you have checked the microphone configuration. Default the Phantom power is off, but to be sure, please check this because Phantom Power from the recorder could damage a microphone that is not made to receive power from the recorder.

Microphones can be connected to ports 7, 8 and 9 as in the picture.

3.2.3 Internal Microphone.

The Business Recorder has an internal microphone to enable dictations being made on a different location without external microphones being available.

NOTE: In Dictation mode the internal microphone is enabled by default. If you want to connect and configure microphones to port A and B, the Internal microphone must be disabled first.

3.2.4 Headset or loudspeakers

The internal loudspeakers are small but sufficient to verify a recording. For better reproduction quality you need external loudspeakers. For typing out recordings, a stereo multi media headset might be the right choice.

NOTE: If you want to use a headset and loudspeakers together you must use S/PDIF (Optical output numbered 5 in the picture) to connect to loudspeakers or amplifier.

Loudspeakers

You can use two different types of multi media loudspeakers or amplifiers: the ones with analogue input or the ones with S/PDIF optical digital inputs.

When you use the analogue output of the recorder you occupy the port labelled "speaker" (numbered 6 in the picture) that can otherwise be used for the headset.

If you need digital output, you use the port labelled Optical out (numbered 5 in the picture)

Headset

You can connect a stereo computer headset with or without microphone with one or two 3.5mm plugs. You connect it to the headset port.

3.2.5 Ethernet

The Business Recorder can be connected to your network in the same way as you connect a PC. A standard UTP cable is required. This cable is not supplied. The port on the back of the recorder is labelled "Ethernet" (numbered 3 in the picture). When you plug in the cable the yellow LED shows that the connection is active. A green flashing LED shows data activity on the port.

3.2.6 USB

Both USB ports are similar and therefore peripherals can be connected to any of these ports (numbered 4 in the picture).

NOTE: Some types of USB sticks may not work properly

The foot pedal (optional)

A foot pedal is a common peripheral to the Business Recorder. It allows you to control playback while typing. When someone is used to it, the foot pedal greatly enhances the ergonomics of typing out recordings. The foot pedal must be connected to one of the USB ports.

3.2.7 RS232

The RS232 (serial port, com port, numbered 2 in the picture) can be used for terminal access to the Business Recorder, mostly used by programmers who want to make applications.

Once connected the Business recorder can be used as a Dictation machine or a Conference recorder. Please read chapter 3 on how to configure the Business recorder and chapter 4 about using the Business Recorder.

4 Configuration

Once connected, you can begin with the configuration of the recorder.

There are two ways to configure your recorder, through the keyboard or through the web browser:

- Configuration using the keyboard of the recorder. This option is always ready for you to use.
- Configuration using the web browser. The recorder first has to be given an IP address.

4.1 Using the keyboard

To begin you press the settings button . The display will show you a list of configuration menus. With the soft keys UP and DOWN you can browse through the list and with OK you can select the menu.

The list contains the following menus:

- Conference Audio Setup
- Dictation Audio Setup
- Security Options
- Network setup
- CD burn options (only on a Business recorder with CD recorder)
- General Setup
- Info

When you select a menu, you can browse a list of menu items with soft keys UP and DOWN and with OK you select the item.

With every item, you can either browse the options for the item or select or deselect the feature with the soft key OK. This is self-instructive from the display so we will not explain for every item how to set it.

4.2 Using the web browser

With your web browser, you have access to the same configuration options in an internet web page. When the recorder has an IP address, you can open your browser and type the IP address.

The preset of the recorder is to ask your networks DHCP server for an IP address. Simply connect the recorder to the network, the yellow LED should light up, after a while it will have found an IP address. Press the left soft key and the IP address should display.

NOTE: If after a few minutes of being connected it still displays 0.0.0.0 the recorder has been unable to acquire an IP address from your DHCP server or there is no DHCP server. In that case, you have to give your recorder an IP address using the keyboard.

When you connect to the internal web server, the first dialog that appears will ask you to log in with username and password. When logging in for the first time use "root" both as username and as password. Of course you can change this afterwards. See also: Security Configuration § 4.6

When you are logged in, the main page shows today's recordings and gives you the option to find recordings. From there click the 'Admin' button. In the Admin dialog, you can add users and select Settings.

The settings dialog shows you the same options as you get with keyboard configuration.

4.3 Operating mode configurations

The recorder has two modes of operation, called "conference" and "dictation". Which differ only in input and output configuration. The two presets are just there to help you configure the recorder for two alternative purposes that can be selected with just a key press.

4.4 Conference and Dictation Audio Setup

Below are the options and their default values for respectively Conference and Dictation Audio Setup followed by a more detailed description:

Option	Conference / dictation
Minimum recording length	4 sec/4 sec
serial control	Disabled/Disabled
WAV	Disabled/Disabled
MPEG	Enabled/Enabled
MPEG compression options	192 Kbps St/64 Kbps Mono
Headset Mic input	Disabled/Enabled
Internal microphone	Disabled/Enabled
Internal speaker enable	Enabled/Enabled
Overload protection	Enabled/Enabled

Pre-amplifier channel A	Enabled/N.A.
set pre-amplifier gain channel A	48/N.A.
AGC channel A	Disabled/N.A.
2.5V Phantom power ch A	Disabled/N.A.
48V Phantom power ch A	Disabled/N.A.
Pre-amplifier channel A	Enabled/N.A.
set pre-amplifier gain channel A	48/N.A.
AGC channel A	Disabled/N.A.
2.5V Phantom power ch A	Disabled/N.A.
48V Phantom power ch A	Disabled/N.A.
Set mixer record volume	25/25

The default configurations above are acceptable as a reference point for you to start with, with one exception: we have disabled the Phantom Power Supply to the microphones. If you have bought the recommended type of microphone that requires Phantom Power, you must first enable it See Chapter 7

The configuration options have the following meaning:

4.4.1 Minimum recording length

Recording with a duration of less then the minimum will not be stored.

4.4.2 Serial control

This enables remote control via the serial port to start and stop recordings. Normally this will be disabled. Enabling this will disable the option to start and stop recording using the recorder keys.

If enabled you will see

```
LINE1 - Record
LINE2 - Play
LINE3 - N.C.
```

4.4.3 WAV

Select this to make recordings in uncompressed WAV-format (CD quality, but takes up a much disk space), default disabled.

4.4.4 MPEG

Select this to make recordings in MPEG-format, default enabled.

When enabled, the next option is to specify which compression mode you want to use.

A range of common audio compression modes is listed. There are stereo and mono recording modes. When mono is selected, only channel A will be used.

Although all recording qualities are good for understanding speech, less compression (that is a higher bit rate) will result in better audio quality.

Coding mode	Capacity of hard disk	Capacity of CD
MPEG - 64 Kilobit/second stereo or mono	2127 Hours	21 Hours
MPEG - 96 Kilobit/second stereo or mono	1417 Hours	14 Hours
MPEG - 128 Kilobit/second stereo or mono	1068 Hours	10 Hours
MPEG - 192 Kilobit/second stereo or mono	708 Hours	7 Hours
MPEG - 320 Kilobit/second stereo	354 Hours	3.5 Hours
Uncompressed Wave (CD Quality)	97 Hours	1 Hour

4.4.5 Headset Mic input

This is the 3.5 mm microphone input that you may use with a headset microphone or a small gooseneck dictation microphone. It is an alternative to the main channel inputs A and B. Usually you will disable this in conference mode. This is a mono input channel.

4.4.6 Internal Mic input

This refers to the internal microphone. When enabled the Phantom Power menu options will not be visible. In dictation mode the internal microphone is enabled by default. In conference mode it is disabled.

4.4.7 Internal speaker enable

This refers to the small internal loudspeakers. Enabling these speakers will not affect the operation of external loudspeakers.

4.4.8 Overload protection

This is a software mechanism that will reduce the record volume when an audio overload occurs. It is only for extreme situation, for example, where people speak far away or very close to the microphone.

4.4.9 Pre-amplifier channel A

This enables or disables the microphone pre-amplifier of channel A. When you use the microphone input it is likely you must use the pre-amplifier, unless the microphone has its own pre amplifier.

4.4.10 Set Pre-amplifier gain channel A

(Active when Pre-amplifier channel A is enabled)

This controls the pre-amplifier circuitry with levels from zero to 63db. The best way to set it is at a high mid level such as 48. Then adjust it from there. The microphone must be adjusted in such a way, that you make the best of very soft sounds and very loud sounds.

4.4.11 Automatic Gain Control channel A

When enabled, the recorder will automatically increase the amplification when the sound is within a certain low range. This has the negative side effect to amplify background noise too. Automatic gain control will not result in a quality recording due to the volume changes and with that the changes in background noise. Therefore, use it for room monitoring and not for recording meetings.

4.4.12 Phantom power supply channel A

This is the 2.5V and 48V power supply from the recorder to the microphone. You must always check the specifications of the microphone before you apply Phantom Power. You can select the appropriate power supply depending on what the specifications are.

4.4.13 Channel B options

The options Pre-amplifier channel B, Set Pre-amplifier gain channel B, Automatic Gain Control channel B and Phantom power supply channel B are identical to the channel A. These options should be set when a microphone is attached to channel B.

4.4.14 Set mixer record volume

This is the input level volume control of the audio device of the recorder that converts analogue audio input to digital. It can be controlled from low to high amplification in 100 steps.

This is the only record volume control if the microphone pre-amplifier is not used. For example, when you record from a conference room microphone-system.

When the microphone pre-amplifier is used, this volume control should be set at medium level; this yields a better signal noise ratio and the pre-amplifier can be used to control the volume.

4.4.15 Set mixer playback volume

This is the play volume for the internal or external analogue loudspeakers. It does not apply to S/PDIF because with a digital connection the play volume must be controlled on the decoder/amplifier.

4.4.16 Jobs to do after recording

If this menu item is selected and activated, choose a task from the list.

- Add to CD Queue
- Burn CD
- Delete recording

Use the soft key **Add** to add actions to the 'Jobs to do' list.

Use the soft key **Delete** to delete actions from the Job list.

The option **Burn CD** can be selected multiple times.

After the scenario is started the Business Recorder could ask to check the CD settings. The Business Recorder will also ask for the second CD if Burn CD was selected twice in the Job list.

IMPORANT

It is important that a person stays with the Business Recorder while it is executing the scenario, because the scenario will stop and the CD will not be burnt, if a time out occurs.

For instance; the Business Recorder needs a person to check the CD settings, should no one be around, the Business Recorder will stop waiting for an answer and switch to power saving mode. This will stop the scenario.

4.5 Security Options

There are three independent security mechanisms in the Business Recorder:

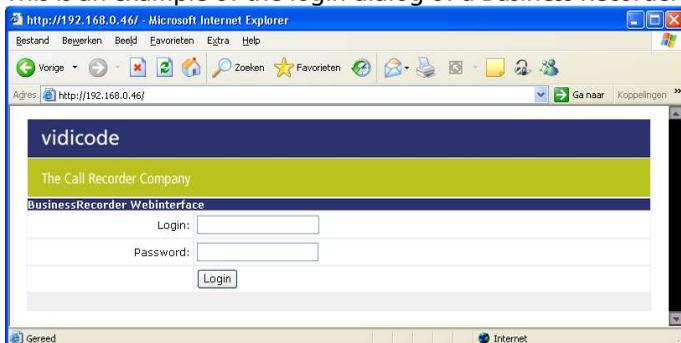
4.5.1 The Device Password

This password must be given before someone can alter the configuration. It will be asked when you press the settings key on the keyboard of the recorder. With a new recorder, the password is disabled.

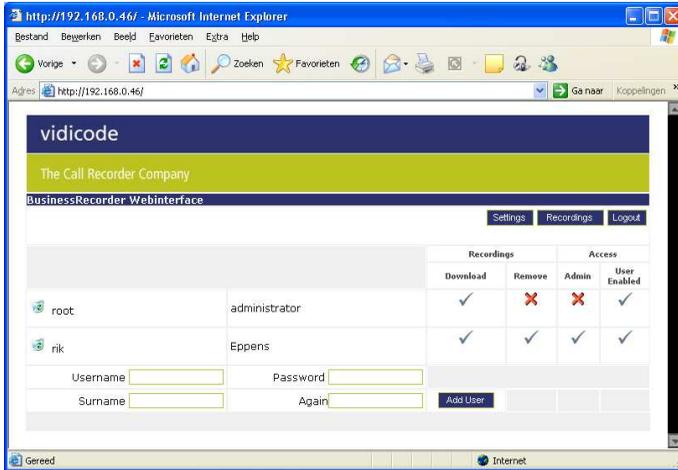
4.5.2 The user configuration for remote access

This is only for network access and offers a higher level of security. The reason is that you want to be more careful with remote access, especially while this may also be via internet. Unidentified access to your recordings on the network is not possible.

This is an example of the login dialog of a Business Recorder:



This is a sample of the user administration dialog:



You can add and delete users and control their authorisation by clicking on the icons.

4.5.3 The CryptoCard

The options are to enable or disable the use of CryptoCards. This also serves as a protection when you want to use a CryptoCard for recording. When enabled the recorder will not start recording before you have placed a CryptoCard in the front of the recorder. It will show a warning message on the display instead.

4.6 Network Setup

These are the (sub)options and their default values for the Network configuration.

4.6.1 Ethernet

DHCP is by default enabled.

When enabled the recorder will get all IP addresses from the DHCP server in your network, which is safe and easy (because you do not have to do anything to configure the recorder). If there is no DHCP server in the network the recorder will not get an IP address. You must then disable DHCP and configure the network with the keyboard of the recorder.

4.6.2 IP address – set by DHCP server

This is the address on the network where your recorder can be found. When you connect the recorder on the LAN it will usually be an internal address such as 192.168.0.46.

4.6.3 IP subnet mask - set by DHCP server

Identifies the part of the network address that is internal, when seen from a wide area network

4.6.4 Default gateway - set by DHCP server

The address of the gateway to extended networks such as internet.

4.6.5 DNS Server addresses - set by DHCP server

These addresses are required to find IP addresses when a name is used as a network address.

4.6.6 Web Server

Default = disabled. When enabled you will have to set a password to gain access to the Business Recorder login dialog, using the root password setting.

4.6.7 FTP Server

Default = disabled. When enabled you will have to set a password to be able to login to the Business Recorder in the FTP dialog using the Login setting.

4.6.8 SMTP – SMTP server address

This is the address of a SMTP mail server. The Business Recorder will use it when forwarding a recording by e-mail. It will be either a name or an IP address. In case of doubt, the IP-address is safe because no DNS-server will be required to translate the address.

4.6.9 Time Server

Default = disabled. The time server address is set to POOL.NTP.ORG. A time/NTP server can supply a very accurate time setting for your hardware using the Network Time Protocol. If you give the recorder an IP-address or network name of an NTP server the time will be updated automatically and the information with your recording when it is made will be very accurate too.

4.6.10 Name

Default network name = businessrecorder

This name identifies the recorder on the local network. When your network supports this function, a name can be used instead of the IP address. The name will also show on the web pages sent by the recorder so you can identify the individual recorder when you have more than one in your organisation. The name is also used as the originating address when sending e-mail.

4.6.11 Domain

Identifies the location of the mail server when sending e-mail.
(Networkname@Networkdomain).

4.6.12 Info

-ip	shows your ip-address
-subnet	shows your subnet mask address
-gateway	shows your gateway address
-dns	shows your dns address
-mac	shows your mac address

4.7 CD burn options

NOTE: These options are only visible if you have a Business recorder with CD recorder.

Burn Data cd's	Disabled
Burn Audio cd's	Disabled
Ask before burning	Enabled

Tools

The few options for burning CD's can only be configured from the keyboard on the recorder.
You can configure the recorder to make generic audio CD's or data CD's.
MPEG CD's are data CD's.

Audio CD's are very convenient, but the drawback is that they contain uncompressed data and therefore the capacity is limited to 74 minutes.

4.8 General Setup

There are four general setup options:

4.8.1 Set Date/Time

The internal clock can be set and is important because your recordings are stored on date and time. Also, note that the recorder can work with an external NTP timeserver. See Network configuration.

4.8.2 Set LCD Mode

The default configuration is white characters on a blue background. The inverted mode is blue on a white background

4.8.3 Set Language

You can select your language from a list. The language will apply to the display and the web interface.

4.8.4 Update

From here you can choose how you want the firmware to be updated, using an USB-drive, CD or through an internet connection with the Vidicode website.

4.9 Info

Here you can find information about the firmware version, serial number and remaining disk space on your Business Recorder.

FW Version	: 1.0.14
Date	: Mar 3 2009
Time	: 15:25:00
HW Version	: 02.10
HW Serial	: 00xxxxx
Disc	: 55799 MB/52719 MB

4.10 Alternative menu

When pressing the settings button followed by the  button you will enter the alternative menu which contains the following items/settings:

- Logging
- Factory Defaults
- Check Recordings DB
- Empty Recordings DB

The **Logging** is a way to keep a log of possible errors occurring, default setting is 3, which will register the most common errors.

With **Factory Defaults** selected you can reset the Business Recorder to the original settings.

Check Recordings DB (database) is something which already takes place when the Business Recorder is starting up, but with this setting you can have the recorder check the database for errors.

Use **Empty Recordings DB** to empty the complete database.

5 Using the Business Recorder

5.1 Recording and playback

Recorder-keys



If you have already read the chapter about installation and configuration you will know, that the recorder works with two presets called

“dictation”  and “conference” .

If you use the presets as alternatives, you must, before you start recording or playback, check if the right preset is selected.

You can either use the keys on the business recorder, or the remote control. The icons on/ above the keys are identical.



Press this button to start recording



Press this button to stop recording



Press this button to Pause / restart a recording.

To playback a recording be aware that the recorder contains many recordings. When you want to play the last recording, it is sufficient to

press .

If you want to play earlier recordings, press the search key.  This will bring the search dialog up where today is indicated as the date. Enter a date, a month or a year, which will give you a list of recordings from these dates. You can use the key .@ to enter a * that will serve as a wildcard. Suppose you want to see all the recordings of Nov 2008, you press the search button and then you enter *-11-2008. The selection shown then will be all recordings of the month Nov 2008.

When a list is shown you can browse the items in the list using the soft keys DOWN and UP. Select a recording by pressing the soft key OK. Press



to play the selected recording item.

During playback, you can use the following controls:



Pause



Fast forward



Fast rewind



Skip to the next bookmark or, if no bookmark exists, to the next recording in your selection



and  control the loudspeaker volume

5.1.1 Bookmarks

The idea of bookmarks is that when you have to write minutes of a long meeting you would spend a lot of time to find the important sections. If you place bookmarks while recording, you will save yourself a lot of time otherwise spent searching.

Setting bookmarks

On the remote control while recording you can place a bookmark by pressing the keys conference or dictation. The bookmarks will be numbered incremental.

On the keyboard while recording you can place a bookmark by pressing one of the numerical keys. Then the key value will remain stored in the bookmark.

Bookmarks can also be used with the Business Recorder Access System software. Just like the skip key on the recorder, the software allows you to jump to the next or a numbered bookmark.

Recordings containing bookmarks can be played on any normal MPEG player or with any audio player software. This is because the possibility to add bookmarks is standard in multi media files. However, media players do not recognise the bookmarks. Therefore, to work with bookmarks on a PC, you must use the Vidicode software.

5.2 The use of export lists or play lists

To manage more than one recording at a time the Business Recorder works with lists, Play lists and Export lists. There are three lists:

- The Recordings list
- The list to be copied to a USB device
- The list to be copied to a CD (if you have a CD drive)

When a recording is visibly selected on the LCD, you can press the function keys with the list symbol:

 Recordings (recordings) to add the selected recording to the Playlist.

 →  (to USB) to add the selected recording to the USB device,

 →  (to CD) to add the selected recording to the CD.

When the recorder is idle you can press any of these keys to select the list. Suppose you press  Recordings, then the list and its options show. This could for example be to play the list.

When you select  → , an option is to send the list, that is all files in the list to the CD.

5.2.1 Add recordings to a list

If you want to add recordings to a list you begin to press the search key .

This will bring the search dialog up where today is indicated as the date. Enter a date, a month or a year, which will give you a list of recordings from these dates. Use the.@ key to enter a * that will serve as a wildcard. Suppose you want to see all the recordings of Nov 2008, press the search button and then enter **-11-2008. The selection shown then will be for the month Nov 2008.

When a selection is shown you can browse the items in the selection with the soft keys DOWN and UP. To select an item press the soft key labelled with OK. Then the recorder will show the details of the item and you can press the PLAY button to play the item. To add the item to a list you press the function key for that list:  Recordings,  →  or  → .

It is important to mention that all lists will be processed or played from the first to the last recording. Therefore we have created the option to change the order in any of these lists. When the list is selected, you can navigate in the list with the soft keys UP and DOWN. When you have highlighted a recording you can move it up in the list using the numeric key 2 and you can move it down with the numeric key 8.

You can use  Delete (Delete) to remove items from the list.

5.3 Export of recordings to other media

The Business Recorder has built in distribution options. You can either use the web interface to retrieve recordings from remote, or use the recorder to export recordings from the hard disk to other media. This section is about export to other media initiated from the recorder.

There are two methods:

- **For USB and e-mail:** transfer the currently selected recording to another medium
- **For CD and USB:** make a list of recordings to be transferred and then send all at once to the other media as we have explained in the section above

Whenever a recording is selected, the recorder gives you options for what to do with it. There are always two options shown, E-MAIL and USB, and when you have the internal CD recorder there is a third option, CD.

When you want to make a list of recordings to be exported, you use the function keys  or .

It is not possible to transfer more than one recording at a time by e-mail. Therefore, there is no function key to make a list of recordings to be transferred by e-mail.

5.3.1 E-mail

The first option to export recordings is by e-mail. If you are dictating letters, you can send them instantly to the person typing the letters for you.

When the recording is selected, or when finished recording, you press the soft key labelled E-MAIL.

FRI 21 NOV 2008 10:20:12.MPEG
DURATION 01:12:30
BITRATE 192KBPS
E-MAIL CD USB RETURN

The recorder will show the e-mail address last used (or an empty line with a cursor when you are using this the first time).

E-MAIL TO			
RECORDERS@VidICODE.NL			
OK	<<<	>>>	CANCEL

Now you can enter a new e-mail address with the numeric keys, typing characters in SMS style, or you can leave it as it is. When you press the Soft key labelled OK, the recorder will ask for a subject line.

SUBJECT			
LETTER TO TIM ABOUT OIL SALES			
OK	<<<	>>>	CANCEL

The subject can be left empty if you want. When you press OK once more, the recording is sent. In practice, this means for persons making many dictations that they can send their dictations away by just pushing the same key 3 times.

Of course, there are many other applications of sending recordings by e-mail. There is just one limitation to mention and that is the file size of the recordings.

A dictation for a letter can take at most several minutes and can easily be sent as e-mail attachment. Usually with a dictation, the compression used is high 64Kbs. A dictation of 2 minutes will be 960Kbyte. You can send it easily as e-mail.

The recording of a meeting however will perhaps last 2 hours while the compression is low because you want the highest quality and best dynamics. Typically, a file of this size (345 Mb) is far too big to send as e-mail. You should not even try that. Instead use a USB stick or CD(if you have a CD recorder in your Business Recorder) to transfer the file, or use FTP to upload the file to a location someone else can download it from.

5.3.2 CD

When your Business Recorder is equipped with a CD recorder, it's possible to export recordings to a CD. The CD option differs from the E-MAIL and USB options because a CD must always be made from the CD list.

When you are finished recording or at any time when you have selected a recording, you can:

- Press the soft key marked CD
- or
- Press .

In both cases, the recording will be added to the list of items to be sent to the CD later.

When the Recorder is idle you can press . This will bring up the CD list. Press CD to send all items in the list to the CD. Of course, this can be repeated, so if you want to make more CD's with the same contents you just repeat the procedure.

During the transfer of recordings to a CD you can follow the progress on the LCD. Do not interfere with the transfer.

The CD functions are explained in more detail in the next chapter.

5.3.3 USB

Another option that you have to distribute recordings is via an USB memory stick or MPEG player. A one-gigabyte USB stick can carry up to 6 hours recording of the highest quality stereo. The transfer to a memory stick is relatively quick.

To use a USB device, connect it to one of the two USB ports on the back of the recorder.

When you are finished recording or at any time when you have selected a recording, there are two possibilities:

- There is a soft key marked USB. When you press this key the selected recording will be transferred to the USB device.
- You can also press . Then the recording will be added to the list of items to be sent to a USB device later.

When the Recorder is idle you can press . This will bring up the USB list. Press USB to send all items in the list to the USB device. Of course this can be repeated, so if you want to send the list to more USB

devices that then will have the same contents you just repeat the procedure.

During the transfer of recordings to a USB device you can follow the progress on the LCD. Do not interfere with the transfer.

USB devices can be safely plugged into the recorder and be taken out after transfer. There is no need to power the recorder down before connecting or disconnecting a USB device. You must not however disconnect the device while transfer is in progress.

WARNING: Do not disconnect a USB device while transfer is in progress, this may result in loss of data or damage to the device.

A USB device can be connected to a PC and the recording can be played directly from the USB stick using the media player of the PC, or it can be transferred to the disk of the PC.

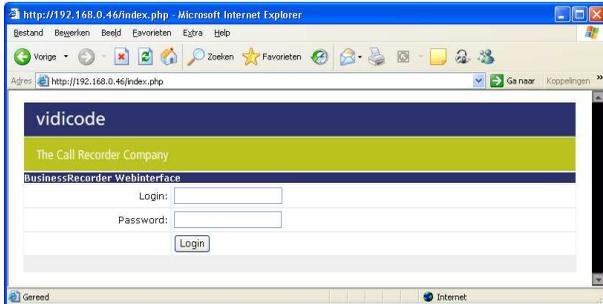
An MPEG player has the additional advantage that it is possible to listen to the recording directly from the player.

NOTE: The USB functionality was tested with many USB devices. It is most likely that the recorder will work with the different USB memory sticks that you find in the electronics stores. However, there will be USB devices that the Business Recorder cannot work with. If this is causing you a problem for a special application, you might inform the manufacturer at support@vidicode.nl. It is possible that new drivers will be published.

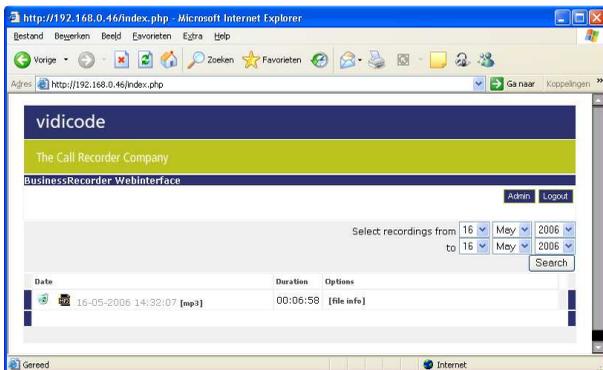
5.4 The web interface

The web interface is an alternative way to access recordings.

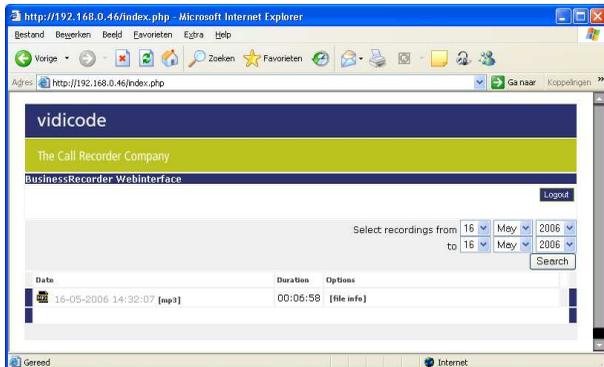
When the user types the IP address or the network name of the Business Recorder in his browser, he will see the Login dialog. Enter username and password.



When username and password have been entered, the recording page of today will appear.



The above is an example as seen by a fully authorised user. The next example is as seen by a user who is only allowed to listen to recordings, but is not allowed to delete recordings or alter Users and Settings.



The pictures show that today only one recording was made.

The user can change the dates shown and then click “Search” to find other recordings. Every line in the page represents one recording with the date and time it was made. For further information click “file info”.

To play or download the recording it is sufficient to click the icon of the recording and the web browser will offer you the option to open or download the recording. When you decide to open the recording, Windows media Player and Quick time will be able to reproduce the recording. There is however, always a possibility that another media player will open (if you have another default player) that is not capable of reproducing the recording.

Authorised users can also delete recordings. They must click on the recycle bin icon and then the browser will ask for confirmation:

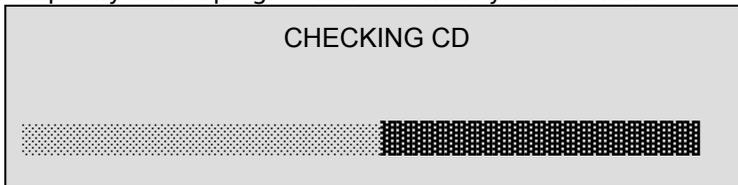
Warning: It is not recommended to allow on line users to delete recordings, because once the deletion is confirmed, the recording cannot be recovered.

6 Using the CD recorder

6.1 Introduction

This chapter only applies to Business Recorders that have the optional CD recorder installed.

A CD drive is relatively slow device. At various stages after you have changed a CD you will not get immediate response. The display will temporary show a progress indicator while you must wait.



6.1.1 Audio CD's and data CD's

Normal audio CD's contain uncompressed audio (WAV), Data CD's contain compressed audio and store audio tracks as computer data.

The Business Recorder has two options:

- to make generic **AUDIO** CD's
- to make **DATA** CD's.

The two cannot be mixed on one CD.

When you have recorded uncompressed audio (WAV) it can be stored on an audio CD, but not on a data CD.

Compressed audio (MPEG) must be stored on a data CD. It is possible to make a generic audio CD the from recordings made in MPEG, the MPEG will be decompressed first.

NOTE: Burning a generic audio CD from a MPEG files takes more time because the recorder must first decompress the MPEG and write it to the hard disk before it can burn the CD.

6.1.2 Recordable CD's and rewritable CD's

There are two types of CD that can be recorded:

- a recordable CD can be recorded once and never be overwritten

- a rewritable CD can be recorded and erased, then recorded again

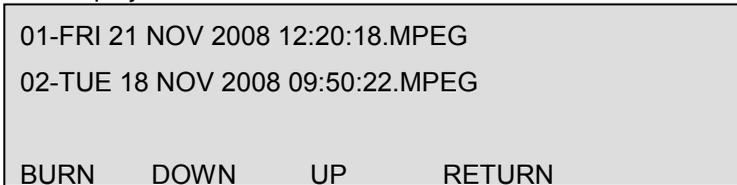
The Business Recorder can erase (blank) rewritable CD's. Apart from that the functions for writing to rewritable CD are identical as for writing that a recordable CD.

6.1.3 Single session and multi session CD

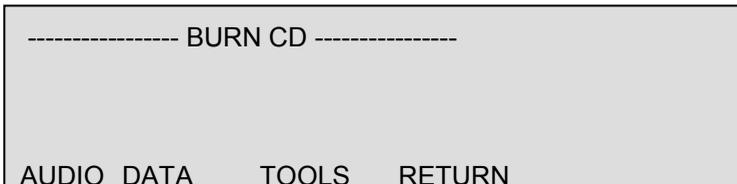
A data CD can be made in two different ways: single session or multi session. The difference is that in multi session mode, new recordings can be added. It is no problem to use CD's multi session. In some situations it can however be useful to only have one single write session on a CD . in that case you can completely control what will be on the CD.

6.2 Making a CD

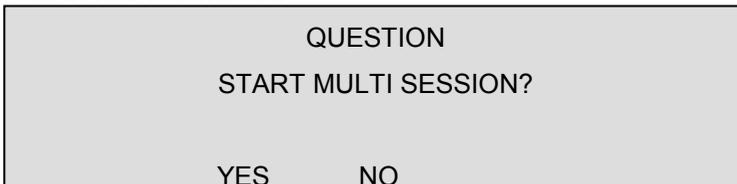
To make a CD you place a CD with enough (remaining) capacity in the CD drive. Then you press . You will see the list of recordings to burn displayed on the LCD:



Press BURN. You will see:



Press DATA. You will see:



If this is the first time that you write data on this CD, the recorder will prompt you for a label.

CD LABEL

OK <<< >>> Cancel

Press OK. You will see:

GENERATING ISO-CD FS
100%%

and:

BURNING.....
REGISTERING

and then:

QUESTION
EMPTY CD-QUEUE OR
BURN OTHER CD?

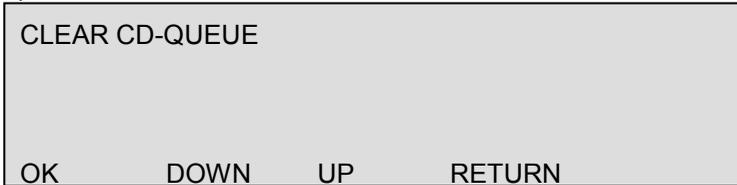
EMPTY BURN RETURN

Press whatever is required. Now you have successfully made a CD with your own recordings.

At various stages in the procedure above, things can go wrong. The CD might be full, made for single session or there might be no CD in the drive. In these cases, you will see comprehensive warnings that will tell you what to do. Usually you must replace the CD and continue.

6.3 CD tools

When you press the  Settings soft key and go to CD BURN OPTIONS, you see the TOOLS as one of the options. Select TOOLS. You will see one option:



Clear CD Queue will empty the list of recordings to be written to the CD. Of course the recordings will remain stored on the internal hard disk.

6.4 Access to the contents of a CD

Press the  Contents function key. The LCD will list the contents of the CD.

You will see a list of recordings that is identical to the list that you see when you make a selection from the recordings on the hard disk. Of course you can play the recordings from the CD. Other available options are to copy the recording to USB or to send it by e-mail. It is not possible however to add a recording from a CD to a list because a CD can be removed and if that would happen the list would not be valid anymore.

7 Connecting a microphone

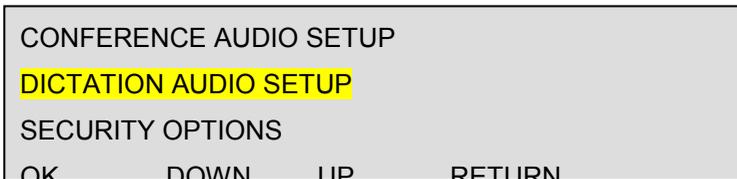
The Business Recorder has two Configuration pre sets which determine the audio input configuration and settings: Dictation and Conference.

The Business Recorder has an internal microphone. In Dictation mode, this internal microphone is enabled by default. This means you don't have to configure it for the first use.

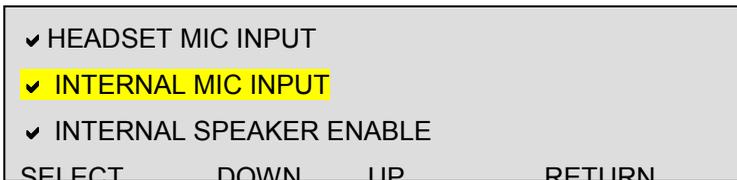
Should you want to use external microphones for dictation as well as for conference mode, it is necessary to configure the microphone(s).

In Dictation mode, first you have to disable the Internal microphone, as some of the options needed to configure the external microphone will not be visible in the menu when the internal microphone is enabled.

- Press the settings button 



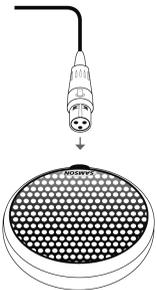
- Press **OK** to enter Dictation audio setup
- Press **DOWN** until you reach Internal Mic input



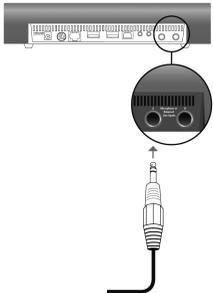
- Press **SELECT** to disable the internal microphone
- Press **RETURN** to go back to the main menu or proceed connecting the microphones to input port A (and B) as described below.

In Conference mode the internal microphone is disabled by default, as is the phantom power. If you purchased the recommended type of microphone, like the Samson CM11B, that is sold as an accessory, you need to configure it for 48V phantom power.

First connect the supplied cable to the microphone with the **3-pin MXLR**.



Then connect the 1/4" (6mm)TRS plug to port **A**. If you connect two microphones plug the second one in input **B**.

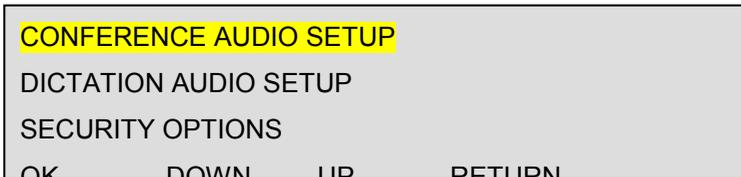


A Main microphone- or line input port A	left channel or mono
B Main microphone- or line input port B	right channel

To enable the Phantom power for the microphones. follow these steps:



- Press the **SETTINGS** button
The display will show the following:



- Press **OK** to enter the Conference Audio Setup or **DOWN** and **OK** to enter the Dictation mode setup

MINIMUM RECORDING LENGTH
 SERIAL CONTROL
 O WAV
 SELECT DOWN UP rRETURN

- Press **DOWN** until you get to 48v Phantom Power Channel A

O 2.5V PHANTOM POWER CHANNEL A
 O 48V PHANTOM POWER CHANNEL A
 O PRE AMPLIFIER CHANNEL B
 SELECT DOWN UP RETURN

- Press **SELECT**
- Press **DOWN** until you get to 48v Phantom Power Channel B

O 2.5V PHANTOM POWER CHANNEL B
 O 48V PHANTOM POWER CHANNEL B
 SET MIXER RECORD VOLUME
 SELECT DOWN UP RETURN

- Press **SELECT**
- Press **RETURN** 3 times to go back to the main display.

Repeat this process for Dictation mode.

NOTE: We have disabled the Phantom Power Supply to the microphones, because we want to avoid the risk of applying Phantom Power to a microphone that was not made for it.

Appendix A - Selecting a microphone

Microphone selection is largely determined by your preferences and the way you want to use the recorder and the microphones. There is a wide choice of microphones that can be used with your Business Recorder. In the following text we will describe some of the common characteristics of microphones to assist you with the selection.

Phantom power

It is important to note that the Business Recorder can supply “phantom power” to your microphone. Although it is possible to work with microphones that use either battery power or no external power source, we recommend the types that use phantom power for these reasons:

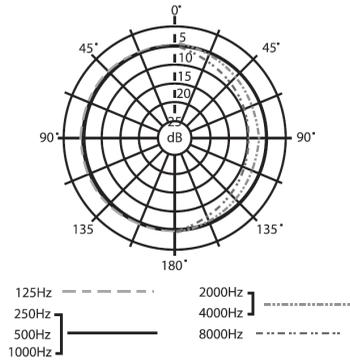
- the signal level that comes from a powered (phantom or battery) microphone is higher and therefore the risk that noise is picked up in the cable is less
- battery power is not very practical, you must switch it on and off and replace the battery in time, when you forget the recording quality will deteriorate

Polar pattern of the microphone

When recording meetings and conferences the microphones must be placed in such a way that sound will be captured from all places where people may speak. The polar pattern is a measure of how much of the sound is captured from any direction. When you expect sound to be captured from all directions, Omni directional microphones must be used. If you only use one microphone and want to record all persons attending, then you have no other choice then to put an Omni directional microphone in the middle.

The pictures show two types of Omni directional microphones with their so-called Polar Patterns. These are typical examples of microphones that you can use with the Business Recorder.

CM11B POLAR PATTERN

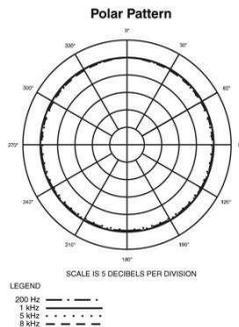


The Samson CM11B microphone in the picture above is sold by Vidicode and its distributors as an affordable Omni directional microphone that is very suitable to record business meetings.

The Audio Technica ES945 is an Omni directional condenser boundary microphone, designed for professional recording and teleconferencing in table-, ceiling-, or panel-mount applications.



ES945



This does not mean that these microphone are the microphones recommended for the Business Recorder as there are many microphones for different applications, but these microphones have a nice price / performance ratio.

Frequency response

A higher frequency range may seem better. However when recording speech, it does not matter too much. An affordable microphone of good quality with a frequency range from 50 to 15,000 Hz exceeds the specifications required for understanding speech.

Sensitivity

A more sensitive microphone may improve the recording quality, although the effect can seem marginal.

Balanced microphones

One of the characteristics you may want to look for is if the microphone is balanced. Using a balanced microphone will result in less noise picked up in the cable, which is especially useful when you use long microphone cables.

Signal to Noise Ratio

The higher the better. However, this might be just a way to spend money. When listening to meetings the noise level caused by the microphone might not be noted within the ambient noise in the room caused by computer, ventilation, traffic outside. It is no use to buy a microphone for studio conditions when you are not recording in a studio.

Integrated pre-amplifier

Some microphones feature an integrated pre-amplifier powered by the Phantom Power of the Business Recorder. You can use these microphones as well. The much higher output levels can be compensated by deselecting the pre-amplifier of the recorder or by setting it at a low level.

Inexpensive computer microphones

Many microphones that you can buy in the computer store are the inexpensive electret microphones. The drawback of these microphones is their relatively low sensitivity. They are acceptable for dictations because then you are speaking close to the microphone. When these microphones are used with the Business Recorder to record meetings, the quality of the recordings might be affected.

Internal microphone

The Business Recorder is also equipped with an internal microphone. This microphone is meant as a dictation microphone only, as the quality is not sufficient for Conference mode. In dictation mode it is enabled by default.

Recommended characteristics for conferencing mode

- Phantom Powered
- Omni directional
- Frequency response from 50 to 15,000 Hz
- Sensitivity < -30dB
- Signal to Noise ration > 60dB
- Balanced microphone

Microphone or headset for dictation

If you want to use the Business Recorder both as a dictation machine and as a conference recorder, we suggest that you attach an inexpensive microphone to the headset port as well. This will allow you to keep the conference microphones in their fixed position.

The headset microphone port cannot supply Phantom Power. The output of a non-powered electret microphone however will be sufficient since you are speaking directly into the microphone. We recommend a headset or an inexpensive 'gooseneck' microphone. The advantage of a headset is that you can listen back without disturbing anyone. Whatever you decide to use, gooseneck microphone or headset, both are relatively inexpensive items.

Multi microphone conference systems

The input channels of the recorder can be configured for a wide variation of levels. It is no problem to use the output of multi microphone systems of a large conference hall as input. Then you will probably not need, and therefore disable, the microphone pre-amplifier.

One or two microphones?

This is not an easy choice. When recording mono from a single channel, you save half of the storage space of the hard disk. With a good quality Omni directional microphone, you will most likely capture all that is said on an average business meeting.

Of course, the spatial effect of a stereo recording is much nicer when you listen. When the meeting room is big, the advantage of two microphones is that people sit closer to a microphone.

To summarise: It certainly is not a bad decision to record just mono from one microphone.

Positioning the microphones

Usually microphones will be placed rather far apart so that everyone attending the meeting is as close as possible to one of the microphones.

A warning is in place however: when recording stereo and playing both channels mixed through one loudspeaker, microphones placed far apart will not work. It will cause strange effects, because sound reaches one microphone sooner than the other. Therefore, when recording stereo, you must playback stereo or place the microphones close together.

Microphone Cable

To connect microphones to the main microphone ports A and B, you will need the connecting cables.

At the side of the Business Recorder, the cable must have a ¼" TRS plug.

The most common plug type on professional microphones is the 3-pin XLRM plug. Your dealer can supply the required cables for this type of microphone because this is a stock item of the manufacturer of the Business Recorder.

The easiest way to connect Microphones with other connectors is to buy an adapter. The most common adapters that you can use are mini XLRM to normal XLRM (frequently supplied with the microphone) or 3.5mm to ¼" (6mm)TRS (also frequently supplied with the microphone).

We recommend using a shielded cable as a microphone cable. For **un**balanced microphones the cable must be as short as possible.

When the sensitivity of the microphone is low, the quality of the cable becomes more important. This is because the level of the noise picked up in the cable will be higher relative to the weak signal of insensitive microphone.

NOTE: By default the Phantom Power Supply to the microphones is disabled. If you purchased the recommended type of microphone that requires Phantom Power, you must first enable it. Phantom power has been disabled because we did not want to take the risk to apply Phantom Power to a microphone that was not made for it.

Appendix B - Special functions and services

The Business Recorder has several functions that do not fit in the general user instructions. They are presented in this appendix.

Business Recorder Access System

The Business Recorder Access system is optional software for Windows PC's with which you can present the contents of up to four recorders as a searchable database. The user can query the database with various search criteria. Important recordings can be archived on the PC with a mouse click. Some features of the integrated MPEGplayer are:

- It works with a CryptoCard to reproduce encrypted recordings on a PC
- It can read and jump to tags placed by the recorder
- It can decrease (or increase) the play speed with constant pitch which can makes speakers who speak fast much easier to understand
- Various tools are provided to enhance the audibility of the recordings of dictations, meetings and conferences

For a full overview of the functions of the Business Recorder Access System and a downloadable manual, please go to our website: www.vidicode.com

Using the optional CryptoCards

The Business Recorder has a card slot in which can be used to place an IC card in the recorder.

Encoding of recordings

The current application is to encrypt recordings. Encrypting is a strong protection against illegitimate listening to recordings. To listen to recordings made using a CryptoCard, a card from the same set is needed. The card is protected with a PIN Code, so the user will need both the card and the PIN Code to be able to listen to the recordings. To make recordings only the card is enough.

There is no connection between the recorder and the encoded recording. With the right CryptoCard the recording can be played on every Business Recorder or on a PC with an IC card reader. We supply inexpensive add-

on card readers for the USB port of the PC. The integrated player of the Business Recorder Access system can be used to reproduce encoded recordings or to export encrypted recordings to normal recordings without any loss of quality.

The CryptoCard technology effectively limits the use of recordings to persons who have access to a card from the set and know its PIN code. The use of CryptoCards is essential when external access is possible to your recorder, especially when the recorder can be reached on internet and your recordings contain confidential information.

There are two types of CryptoCards available. The most important difference between them is that there are cards which can only be used for recording, while others can be used for recording and playback. Cards that can only be used for recording are useful when there is a risk that the recorder is used for illegal playback. With a Business Recorder, it is more common to use the type of card that is for both recording and playback because the real threat for a Business Recorder is access via the network or via recordings that are copied on a CD or USB.

When a card with playback functionality is placed and an encrypted recording is selected, the display will prompt the user for the PIN code. When the PIN is entered wrong for 3 times in sequence, the PUC code is needed to make that card operational again. During playback, there is no difference in audio quality.

Certificates

Certificates can be used to provide additional evidence that a recording is real and unchanged. They can also provide a better indication of when the recording was made and of the person who was responsible.

The requirements for certificates can vary between users. Therefore, introduction of certificates as we write this is delayed until a further investigation of the subject is completed. The Business Recorder as it is now however is ready to produce certificates. For further information on the subject, you can check the website www.vidicode.com.

Using a foot pedal

There is an optional foot pedal available for the Business Recorder. The foot pedal is a tool when typing out the minutes of a meeting. Play and Pause, Fast Forward and Rewind can be controlled by foot.

The foot pedal has a USB connection. It must be connected to one of the USB ports on the back of the recorder.

The USB foot pedal also works with the Business Recorder Access System software for the PC.

Software updates

The Business Recorder is a complicated and powerful system. There is a lot of potential to develop extra features for the product. Users will propose changes and bugs may be found and resolved. Therefore, we suggest that occasionally you check for updates.

The update procedure can be found in the settings menu under general settings. When you select the option UPDATE, you will be given three possibilities; USB, CD and WEB.

Update via USB

The latest update of the software for the Business recorder can be downloaded from the website www.vidicode.com. When you have downloaded it into your PC you can transfer the update files to an USB device. The USB device then must be connected to the back of the Business Recorder and the update from USB must be started. As with the web update, the display of the recorder will show you when download and installation of the software are in progress. Please do not interrupt this process.

Update via CD

The latest update of the software for the Business recorder can be downloaded from the website www.vidicode.com. When you have downloaded it into your PC you can transfer the update file to a CD. The CD can then be inserted into the cd-drive of the Business Recorder and using the menu you can start the update. As with the web update, the display of the recorder will show you the progress of the update. Please do not interrupt this process.

Update via WEB

When there is a direct connection between the Business Recorder and the internet, the web update can be tried. The requirement is that it must be allowed to the Business Recorder to access the website of the manufacturer and download the latest version of the software. The display of the recorder will show you when download and installation of the software are in progress. Please do not interrupt this process. When this does not work you must consult your network manager, or use the other alternative, update through USB or CD.

GNU General Public License.

Some portions of the device software are covered by the GNU General Public License. The source code of these portions will be provided upon request for a charge of no more than the cost of physically performing the source distribution under the terms of Sections 1 and 2 of the GPL License *) on a medium customarily used for software interchange;.

If you want to receive the source code, contact Vidicode:

Vidicode
Blauw-roodlaan 140
2718 SK Zoetermeer
The Netherlands
Tel: +31 7936117181
Fax: +31 793618092
E-mail info@vidicode.com

The GPL License can be found on the Application CD with your Business Recorder, directory **Licenses**

Appendix C – Technical Specifications

General

Mains Supply:	90 – 264 V AC, 50/60 Hz
Secondary Supply:	9 – 11 V DC
Power consumption:	15 W
Operational Temperature Range:	0 to 40°C
Operational Humidity Range:	10% - 90% RH (Non Condensing)
Dimensions (L/W/H):	26cm / 19cm / 6cm
Weight:	1200 grams
Operating System:	Linux Kernel v2.4

Technical Standards

EU Emissions	EN 55022: 2011
EU Immunity	EN 55024: 2010
EU Safety	EN 60950-1:2006+A2:2013

Main audio inputs line-in or microphone in (Channel A and B)

Connector type A & B:	TRS ¼"
Sensitivity (AGC on and off):	-80 dBV / 0,1 mV
Input impedance (SE / Bal):	4 kOhm / 9 kOhm
Balanced input CMRR:	>65 dB
50 Hz High pass filter:	12 dB / oct
Phantom power:	0V, 5V and 48V software selectable on each channel separate

Internal Speakers

Number:	2
Audio Power:	500 mW / speaker
Bandwidth:	400 – 4000 Hz

Headset Speaker (line-out) and Microphone:

Connector type (speaker & Mic.):	3,5 mm mini jack
Speaker Impedance:	32 Ohm
Speaker output level:	1,4 Vrms @ 32 Ohm
Number of Speaker Channels:	2 (L & R)
Microphone Sensitivity:	1 Vrms gain max. 30 dB
Microphone Impedance:	2200 Ohm
Microphone Bandwidth:	20 – 20.000 Hz
Microphone Phantom power:	5V (for Electret Microphones)

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